

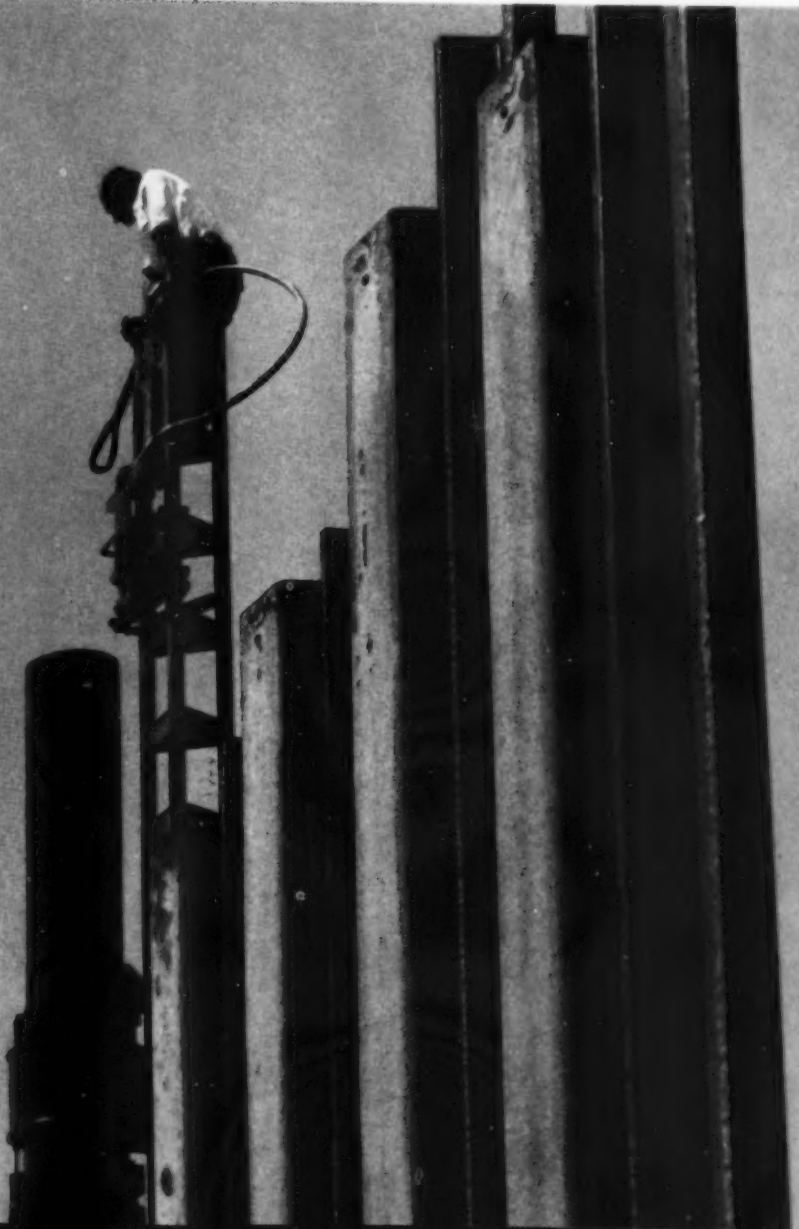
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- *Is Your Advertising Effective?* 80
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B U S I N E S S

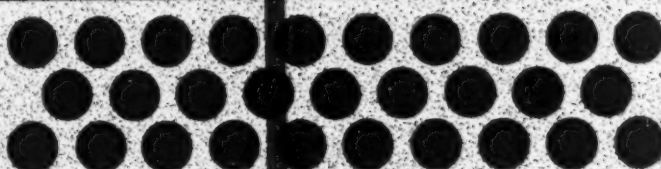
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February 1958

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JOURNAL OF MANAGEMENT

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COVER PICTURE

Pile-driving on the fore-shore at Berkeley, Glos., where a nuclear power station is being built. Contractors are A.E.I.—John Thompson Nuclear Energy Co. Ltd., for whom this colour photograph was taken by Adolf Morath, London.

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ECONOMIC PROSPECT

Survey and Forecast of Business Conditions

More Buying

► Retail sales have lately been rising and will continue to rise steadily. Personal expenditure is also rising. Both domestic and industrial hire purchase sales are at a high level and the former at least should expand further in the Spring.

► Plans for industrial investment have been reduced slightly, though the total spending in this sector will continue at a high level. Public investment by central and local authorities together, particularly in housing, is past the peak. But private investment in housing is continuing at a high rate.

Output Rise

► On balance, total consumer and investment spending is likely to rise, and a cut in Bank Rate would certainly tip the scales in favour of a higher total. Government spending will also be up. So the prospect is for reduced slack in the employment position, as Spring turns into Summer. And total industrial output should rise.

► The seven-year-record low British trade gap and better terms of trade are improving the Gold and Dollar Reserves, and there is the prospect of this satisfactory balance of payments continuing. The American recession, which will end by mid-summer, will not have any more serious effect on world trade than it has had to date.

Price Plateau

► Raw material prices have continued to fall, and retail prices are again stabilizing. The modest wage rises in the Spring will largely be absorbed through lower material prices and rising output, so there is the prospect of continuing stability in the retail price level.

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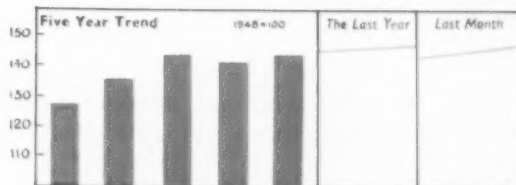
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- Five key indicators to the State of the Nation, followed by 18 indicators to the main economic influences.

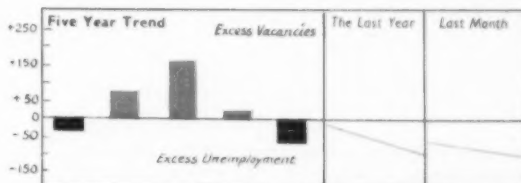
INDUSTRIAL PRODUCTION ▶

Industrial production is growing less rapidly, but a stronger rise is possible this Spring. Index for November is provisionally estimated at 146-147—about $3\frac{1}{2}$ points higher than October, (influenza month), $1\frac{1}{2}$ points above a year earlier and about $13\frac{1}{2}$ points higher than four years earlier. Despite a general slackening in the rate of growth, some sectors of industry, notably motor manufacturing, continue to make good progress.



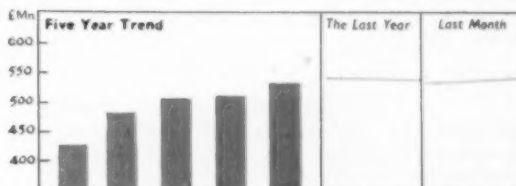
EMPLOYMENT POSITION ▶

Employment position continues to slacken slowly. In December there were 99,000 more unemployed than vacancies. This is 34,000 more than a month earlier, 81,000 more than a year earlier and 47,000 more than four years earlier. The consumer goods industries seem to be losing labour more rapidly than the rest, whilst capital goods industries are unable to absorb additional labour and expand output quickly. There should, however, be some general rises in employment in the Spring.



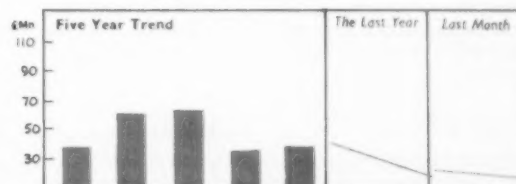
MONEY FLOW ▶

Business money flow has recently been increasing in conformity with seasonal trend. Average daily bank clearings for November were £536.6 million—£7.9 million above October (an abnormally low month), £1.1 million less than a year earlier, but £128.4 million more than four years earlier.



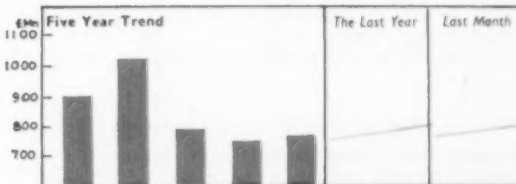
TRADE GAP ▶

Trade gap has reached the narrowest for seven years. December's excess of imports over exports was £19.1 million—£3.0 million below November, £23.8 million below a year earlier, and only £10.4 million above the record low for December 1951. Although the adverse effects of Suez have now gone, there is some possibility of a slight contraction of exports due to reduced level of world trade.



GOLD AND DOLLAR RESERVES ▶

Gold and dollar reserves continue to mount steadily. The December total was £810 million—£30 million above November, £150 million above September, £48 million above a year earlier, but £176 million below three years ago. Provisional deficit with the E.P.U. was a disappointing £6.1 million, as opposed to £1 million in November. Again special circumstances like 'window dressing' by French banks account for this.



● KEY TO THE CHARTS. Bar charts show the 'Five Year Trend,' taking for each year the average monthly value during the most recent three months. Graph lines for 'The Last Year' compare the most recent month with the same month a year ago. Graph lines for 'Last Month' compare the most recent month with the previous month.

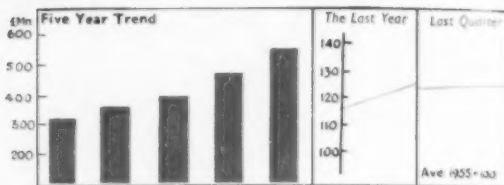
● READERS' ENQUIRIES. Spot enquiries by letter or telephone, involving no research, are answered free. More detailed enquiries will be charged for at cost, on the basis of professional staff time absorbed. This applies to both general management and economic enquiries.

MAIN ECONOMIC INFLUENCES on the STATE OF THE NATION

1. Trends in CAPITAL SPENDING

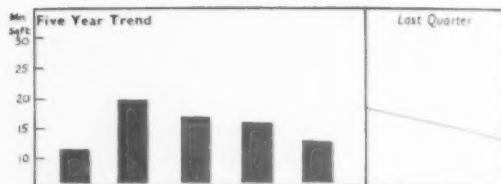
INDUSTRIAL INVESTMENT PLANS ▶

Trend of industrial investment continues slightly downwards. Latest Board of Trade index, for third quarter of 1957, is 124—1 point above previous quarter and 6 points above same quarter a year earlier. Absolute level of investment is still high but the present trend though not alarming, is towards modest decline.



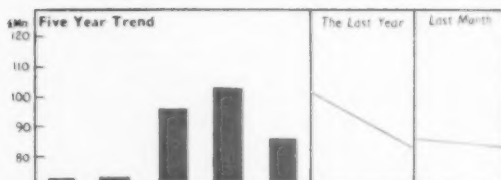
FACTORY BUILDINGS APPROVALS ▶

Factory building approvals are still falling. Area approved for the last quarter of 1957 was 13.9 million square feet—4.1 million below the third quarter, 1.4 million below a year earlier and 5.9 million below three years earlier. These figures confirm the end of the spate of building which began with raising of restrictions in 1954.



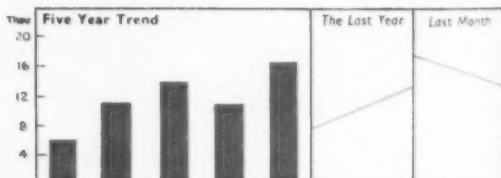
MACHINE TOOL ORDERS ▶

Machine tool orders have risen slightly, but not as fast as output. The October 1957 total of outstanding orders was £82.3 million below a year earlier. Total orders in hand have fallen to the equivalent of nine months' output. A year earlier they were equivalent to 13 months' output.



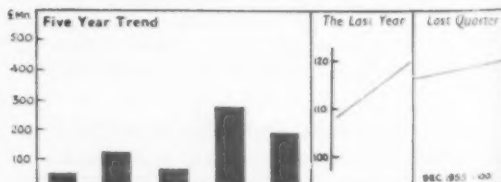
INDUSTRIAL HIRE PURCHASE ▶

Industrial hire purchase has shown a seasonal decline, but has been at a much higher level than a year earlier. Number of H.P. contracts for motor vehicle sales last year was a record, passing the one million mark for the first time. The accompanying chart, based on contract figures for new cars and commercial vehicles shows December sales to have been about 27 per cent below November but 93 per cent higher than a year earlier.



MATERIAL STOCKS ▶

Material stocks are rising slightly but should level off soon. Latest available Board of Trade index, for the third quarter of 1957, was 119.2—3.0 above the previous quarter and 10.8 above a year earlier. This rise is probably due to 'involuntary' stockbuilding following slacker demand. Tighter credit, however, makes a leveling off or even substantial reductions likely.



HOME BUILDING STARTS ▶

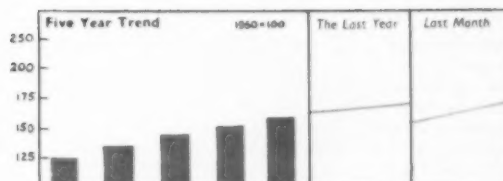
Home building starts, although high, seem likely to decline. National total for the third quarter of 1957 was 74,000—a fall of 6,000 on the previous quarter, but a rise of 4,000 on the same quarter a year earlier. This seasonal decline has been reinforced by the Ministry of Housing's reduction of advances to local authorities in the final quarter of last year to 10 per cent less than a year earlier.



2. Trends in CONSUMER SPENDING

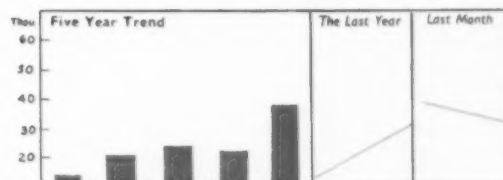
RETAIL SALES ▶

Retail sales have been rising in value. Board of Trade Index for November was 169—13 points higher than October, 8 points higher than a year earlier, and 37 points higher than four years earlier. About half the 5 per cent increase in sales value over 1956 was, however, absorbed by higher prices.



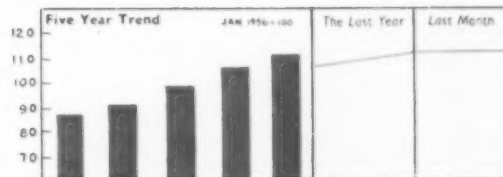
DOMESTIC HIRE PURCHASE ▶

Domestic hire purchase, although undergoing slight seasonal decline, remains very much higher than a year earlier. The accompanying chart, based on used car contract figures, shows the recent trend. December sales, about 20 per cent down on November, were about 120 per cent greater than a year earlier, with gas and electrical appliances accounting for much of the increase.



WAGE RATES ▶

Wage rates have steadied after the slight increase recently. The November index was 112—the same as October, but 1 point higher than for the preceding five months, 6 points above a year earlier and 24 points above four years earlier. An increase of not more than 3 per cent seems possible early this year.



PERSONAL EXPENDITURE ▶

Personal expenditure is still rising, a trend likely to continue. £3,556 million was spent in the third quarter of 1957, compared with £3,395 million a year earlier and £2,850 million four years earlier. In real terms, personal expenditure has risen by 8 per cent in the last four years.



3. Trends in PUBLIC SPENDING

PAYMENTS FROM EXCHEQUER ▶

Payments from exchequer are so far about £8 million above a year earlier. Total payments to December 31 last year were about £3,536 million, compared to £3,528 million to December 31, 1956. It seems likely that the total for the current financial year will be substantially above the estimates.



EXCHEQUER DEFICIT ▶

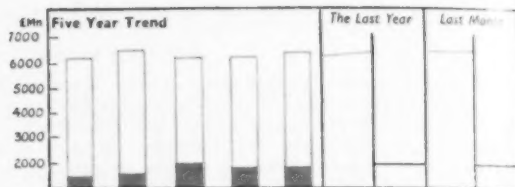
Exchequer deficit is so far about £29 million less than a year earlier. Total deficit to December 31 last year was about £898 million, compared with £927 million a year previously, £651 million two years earlier and a total deficit of £391 million for 1952.



4. Trends in CREDIT POLICY

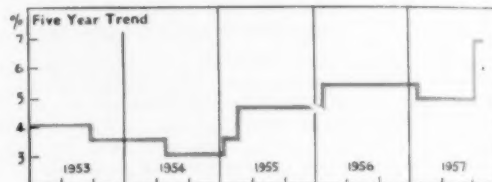
BANK DEPOSITS AND ADVANCES ▶

Bank deposits and advances have both declined. November deposits were £6,508 million, or £22 million down on October but £173 million above a year earlier. Advances were £1,874 million, or £48 million less than October and £8 million less than a year earlier. Further reduction of advances may be difficult, however, with borrowers keeping loans near overdraft limits.



BANK RATE ▶

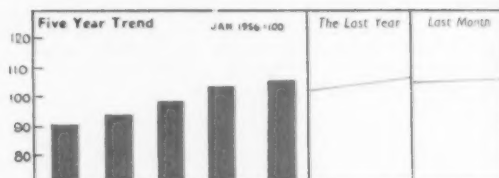
Bank rate may be reduced slightly soon, but substantial reduction is unlikely for some time. The record U.S. budget, together with timely union moderation over recent wage claims in Britain, has set a generally hopeful note. Movements of the rate in recent years are shown on the accompanying chart.



5. Trends in MARKET PRICES

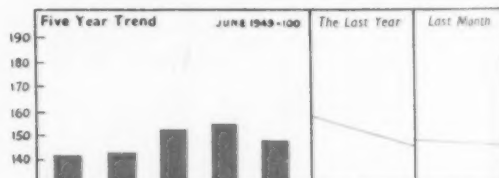
RETAIL PRICES ▶

Retail prices show signs of levelling off again. December index was 108.2—a rise of 0.5 on November, 4.8 on a year earlier and 16.2 on four years earlier. The existing tendency towards stability may be reinforced by the present slight decline in demand for non-durable consumer goods.



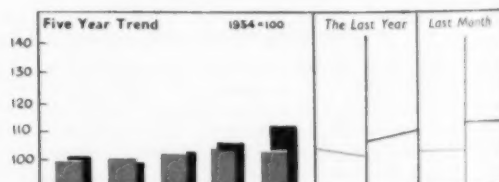
RAW MATERIAL PRICES ▶

Raw material prices are still falling. Provisional December index was 144.2, or 2.0 below November, 16.9 below the freak Suez high, but 2.5 above four years earlier. Prices of fuel and mechanical engineering materials remain, however, at a generally high level.



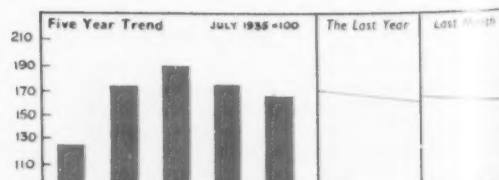
TERMS OF TRADE ▶

Terms of trade have moved further in our favour, but are likely to stabilize soon. December import index fell 2 points to 101, which was 8 points less than a year earlier but 2 points higher than four years earlier. December export index remained at 111, which is 3 points higher than a year earlier and 11 points higher than four years earlier.



SHARE PRICES ▶

Share prices have recently been in the doldrums. At the time of going to press, *Financial Times* index of industrial ordinary shares is about 163.5—3.2 lower than the average for December, 19.7 lower than a year earlier, and 29.6 lower than two years earlier. Bank rate reduction backed by a rise in output of the capital goods industries, could stimulate a strong recovery in share prices.



Fashions change

FASHIONS change almost as rapidly in pension schemes as in dress. Just now, Pension Funds approved under Section 379 of the Income Tax Act, 1952, are all the rage. Yet the next turn of the legislative wheel may well bring with it compulsory transferability of pension rights. When that day comes, those Companies who have installed Pension Funds of this particular type for small groups of employees may find themselves regretting their decision.

Soon fashions may change again, the Sack may be on the way out and the ladies may be flocking after something new.

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HOME MARKET SURVEY

A Round Britain Survey: Regional Notes on Markets and Industrial Developments

MIDLAND

MOST firms in the region are busy, due largely to order books that were filled some months ago.

The flow of new business is steady, with the outlook reasonably good. In the Birmingham area a continued shortage of certain classes of skilled labour continues to trouble employers, whilst competition for youngsters starting careers remains keen. Higher costs resulting from wage increases place some export producers at a disadvantage.

No major recovery is likely yet for the **pottery industry**. Credit squeezes here and abroad have brought the closure of more than a dozen firms. Between May 1956 and May 1957 the number employed fell by 6,000 to just under 71,000, of whom about 50,000 are in the Potteries.

Rugby is trying to encourage the establishment in the area of **more light industry** to employ women. This action is being taken largely as the result of an increase in the number of school-leavers and the dispersal of the British Thomson-Houston lamp factory to other centres. **Flatted factories**—solution to the dual problem of relieving pressure on space and finding alternative in-town accommodation—are on the way in. The first of them, in the Dartmouth Street redevelopment area of Birmingham, has been let off to tenants at between 5s. 6d. and 6s. 3d. a square foot. Total floor space is 117,000 sq. ft.

Stern and Bell (of the Triplex Safety Glass group) have initiated Birmingham's first major **industrial redevelopment** in the shape of a new £200,000 factory in the city's Ladywood district. The building will house two engineering factories scheduled for demolition under Birmingham's "Manzoni Plan".

Thermalite are building a £750,000 plant near Birmingham which is to produce **cellular concrete** load-bearing building blocks of high thermal insulation value from pulverized fuel ash obtained from one of the most important groups of thermal power stations in Europe. Production should start early this autumn—just before the Thermal Insulation Act becomes law. The firm are planning a number of similar plants to be built throughout Britain in the next few years.

This spring should see Raleigh Industries' new £5m. **cycle factory** at Nottingham in full operation. It covers 20 acres and increases existing plant in the world's largest cycle works by 50 per cent.

The British Transport Commission has placed a £3m.

contract for 45 main-line 1,550 h.p. **diesel-electric locomotives** with the Birmingham Railway Carriage and Wagon Company. The locomotives—British Railways Type 3—will have Sulzer diesel engines, made in this country by Vickers-Armstrongs, and Crompton Parkinson electrical equipment, and are for use on the Kent coast lines of the Southern Region.

Late last year B.T.H. delivered to British Railways the first of ten 800 h.p. diesel-electric locomotives. Other work in hand for B.R. includes 30 power equipments for 1,160 h.p. locomotives, 40 sets of traction equipment for 3,300 h.p. locomotives, and 25 complete 3,300 h.p. electric locomotives.

Ruston and Hornsby and J. L. Kier and Co., of London, are to collaborate in the design, development, and building of **nuclear power stations** of 5 to 25 megawatts capacity. A combined design team is now engaged on this project at Ruston and Hornsby's Lincoln Works.

Plans for expanding the British **iron and steel industry** have led the Wellman Smith Owen Engineering Corporation to allocate £485,000 for equipping their Darlaston and Belfast works with the most modern machine tools. Work on extending their Heavy Fitting Shop at Darlaston is well under way.

The Wolverhampton Metal Co. estimate that £50,000



The vertical line at 100 represents the national average level of retail trade for the latest month (November). Against this average the performance of each region may be measured



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will be necessary to improve production methods and plant, so as to meet the conditions of the Free Trade Area. They feel the latter may give rise to increased exports from this country of scrap and refining materials, which would have direct repercussions on the home industry's manufacturing potential. Wolverhampton Metal's proposed expenditure is intended not only to increase efficiency but to cut costs also.

B.S.A. have received an initial £50,000 order for Triumph 500 c.c. motorcycles from the Swedish Army. The contract was placed after rigorous testing of various European types. Massey-Harris-Ferguson begin full production early this spring of the powerful "Massey-Ferguson 65."

Hucknall No. 2 Colliery, near Nottingham, has started a nine-year, £3m. reorganization scheme. It involves sinking a new shaft 900ft. below present workings to exploit 36.5 million tons of coal at the lower level.

Ready mixed concrete can now be supplied to contractors working within a 20-mile radius of Trent Gravels' new plant at Mansfield, Notts. The plant, one of the biggest in the U.K., and costing over £100,000, has a maximum output of 90 cubic yards of concrete per hour and can be operated by only two men.

EASTERN

MR. Henry Brooke, Minister of Housing and Local Government, has reduced the area allocated generally for industry by the Essex county development plan, introducing the following modifications:

Land in Metropolitan Essex allocated for industrial development will be reserved for reorganization of existing industry, especially the re-siting of badly sited local industry. On Thames side, land suitable for industry will be restricted to undertakings needing access to the river but not employing large numbers of people. Industries that can move out of the metropolitan area will not be allowed to extend on their present sites. The Plan also seeks to preserve the Green Belt, improve communications, and "zone" the towns for residential, commercial and industrial use.

Last month saw the completion of factory extensions costing £500,000 at Ransomes and Rapier. The modifications facilitate the construction of 300 and 600-ton walking draglines. The firm is saving the country \$5m. through building two W.600, two W.300 machines and a third W.1400. As open cast working of iron ore and coal deposits develops further machines of these types will be required. In July last year the world's largest walking dragline, weighing 1,675 tons and costing £800,000 was delivered to the United Steel Companies by Ransomes and Rapier. Similar equipment will be required for the same open cast ore project at Euston Park in five years time.



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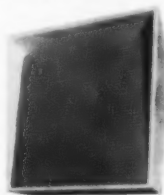
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ECONOMIC PROSPECT

Ford's £65m. five-year expansion and modernization programme is now well under way with the completion of one of its major projects—their new £8m. foundry at Dagenham. The main building is 1,200ft. long, 180ft. wide and 70ft. high. Full production is scheduled for an early date, with planned capacity at 400 tons of castings daily—about two-thirds of total Ford output.

London and Thames Haven Oil Wharves are to spend £1½ million on two modern deep water jetties to accommodate much larger tankers, together with ancillary installations for their rapid discharge. Work should be finished by the end of this year. A further plan to provide additional storage may bring capital expenditure up to £2½m. over the next two years.

Murex are erecting an entirely new plant at Rainham for the production of pure tantalum and niobium powders. The plant should come into production in 1959.

Shell have agreed to supply the North Thames Gas Board for 10 years with about 14m. cubic feet of gas a day from Shellhaven, beginning in the middle of this year. A £500,000, 24-inch, 15½-mile long steel pipeline has already been laid by William Press and Son to take the gas at 275lb. per square inch to the Board's new Romford plant. Here four catalyst vessels will produce 36m. cubic feet of 500 B.T.U. town's gas daily. Output may be further augmented by stepped-up gas output from Shellhaven and additional supplies from the refineries at Coryton and Canvey.

Fisons are building a £200,000 factory at Bramford, near Ipswich. Equipment, including an automatic mixing unit capable of controlling the mixing of compounds containing up to 10 different ingredients, will help produce more than 60,000 tons of horticultural fertilizers a year.

Another plant at Stanford-le-Hope on the north bank of the Thames should be in production this autumn. Under an agreement with Shell, Fisons will take the equivalent of 60,000 tons of ammonia per year for conversion into nitrogenous fertilizers.

Pye are working on a £1m. contract they received recently for the supply of a considerable proportion of the instrumentation for the Spadeadam Rocket Research Establishment. The installation comprises a comprehensive system of control, measuring and data handling equipment for the static testing of rocket motors and missiles, television and optical equipment for test observation, and auxiliary services such as telephone, public address, alarm and warning systems.

The Department of Scientific and Industrial Research is replacing its Greenwich Fuel Research Station with a new one at Stevenage. Work on the site is in progress. The Station should be ready for occupation this autumn and completed in spring next year. Estimated cost £750,000.

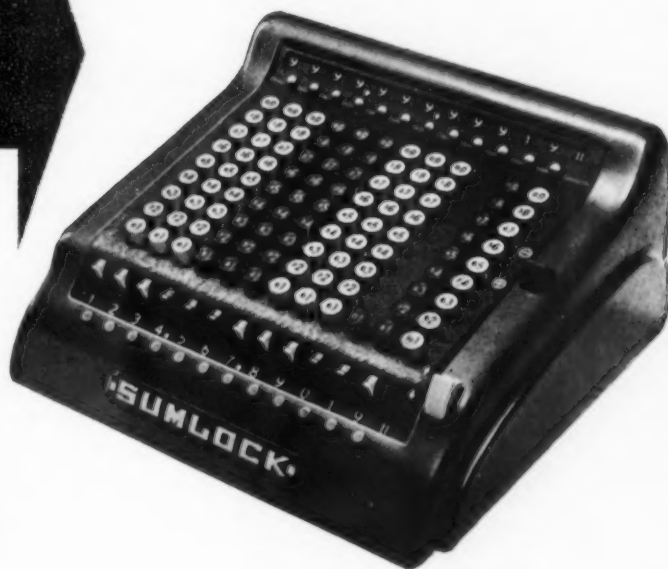
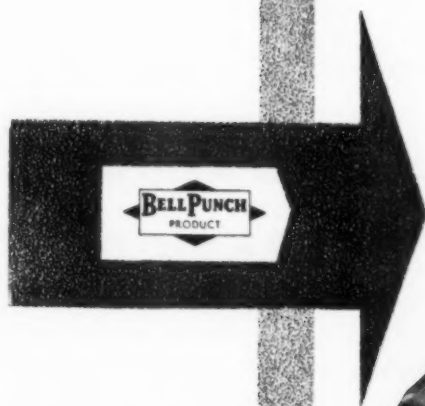
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BUSINESS

EXPORT MARKET SURVEY

A Round-the-World Survey: Country by Country

CANADA

CANADA is nearly 4m. square miles in area—bigger than the U.S. (including Alaska) and 41 times the size of the U.K. Her population is 16½ million, with 80 per cent of it concentrated in Ontario and Quebec. The country's phenomenal rate of growth since the war has led it to lean heavily on the United States for the necessary development capital and consumer goods. Imports of the latter two items from the U.S. now comprise 73 per cent of all imports, as opposed to 8½ per cent from Britain.

U.K. residents own about £715m. of assets in Canada, making the U.K. share 17 per cent as opposed to 77 per cent owned by the U.S.

Canada's government recently sent a 55-man **Trade mission** to this country with the aim of reducing the Dominion's dependence on the U.S. by raising British imports to 15 per cent.

Anyone interested in establishing or increasing trade with Canada cannot therefore do better than take a look at the list of items this team came looking for. It includes electrical power equipment, heavy construction and foundry machinery, lumber and saw mill machinery, oil, gas and mining equipment, textile machinery, and fish and food packing machinery. It should also be noted that sales of small cars in Canada are on the increase, with Continental manufacturers getting a big share of this expanding business.



In approaching the question of selling **consumer goods** to Canada British firms should remember the Canadian mission's characterization of the market, which has vastly increased numbers of people with money to spend on something more than the necessities of life. This has meant a sharp upgrading in the quality of consumer goods. Another feature is **rapid change** with a high rate of depreciation and obsolescence and hence rapid changes in style. Agencies which can help the manufacturer of consumer products to market them in Canada include: the United Kingdom and Canadian Trade Commission Services; the Dollar Export Council and its Canadian counterpart; the U.K. buying offices of larger Canadian wholesale and retail organizations; the Canadian Importers and Traders Association; the Canadian Wholesale Dry Goods Association and the Canadian Boards of Trade and Chambers of Commerce.

Canada is at present in a **period of consolidation** after a rapid economic spurt in 1955 and 1956. Industrial production last year was fairly steady, with lower output in some industries accompanied by lower prices. Latest available figures show that during 1956 Canadian production of metals reached a new record of 1,134m. dollars—126m. dollars higher than the previous year.

Since 1940 the capacity of the **primary steel industry** has risen from less than 2½m. tons to over 5½m. tons annually, with room for further expansion. Between 1948 and 1956 \$335m. was invested in the industry.

Iron ore development is particularly rapid in Eastern Canada, but an important project is afoot further west in the Mount Wright and Mount Reed areas. Smaller deposits are being exploited at Natashquan, Quebec, and Pontiac (near Ottawa), whilst a body of ore estimated at 100m. tons is under investigation in northwest Ontario.



The Steel Company of Canada is to spend \$100m. on expansion. The Algoma Steel Corporation aims to increase capacity 30 per cent by 1959. They already produce 1.28m. tons annually. Other companies currently expanding are Dominion Foundries, the Dominion Steel and Coal Corporation, Atlas Steels, Canadian Steel Foundries and Canadian Car and Foundry, to mention but a few.

Although **cement production** rose from 25.2 million barrels in 1955 to 29.6 million barrels in 1956, continued shortages caused a one-third increase of imports to more than 3 million barrels.

Long-term demand is expected to increase considerably due to the introduction of 'autoclaving', increasing use of pre-stressed concrete and the growing highway programme. During 1956 and the early months of 1957 nearly 14 million barrels were added to the capacity of the Canadian industry.

During 1956 845,000 h.p. of new **hydro-electric capacity** was added to the country's supply, more than 1½ million h.p. went into operation during 1957 and more than 2½ million is due to go into operation this year.

A \$5½ million allocation has been given to British Thomson-Houston to survey a 40,000 square mile area of North Central British Columbia. Investigations al-



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ready carried out in the Rocky Mountain Trench indicate the feasibility of initiating the world's greatest hydro-electric power project there. The plan—to harness a river system just to the west of the main Rocky Mountain peaks—provides for a dam across the Peace River. This will form a lake 260 miles long by 12 miles wide containing $5\frac{1}{2}$ million cubic feet of water. Estimated power output will be a minimum of 4 million horse power. Construction should start early in 1960. Incidental benefits will be improved navigation on the vital Mackenzie River, the saving of the valuable sea trout fishing industry and possibly also a modified climate.

Numerous other **hydro and thermo electric** projects are under way in Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick and Nova Scotia, whilst surveys in Labrador and Newfoundland show promising results.

Canada's first two major **natural gas** pipelines—from the Peace River fields to Vancouver and the northern United States—are now operating. The British Columbia Electric Company is to spend a minimum of \$7½m. on construction of a pipeline across the Strait of Georgia to Vancouver Island. The daily supply of 300m. cubic feet to the U.S. Pacific Northwest is being raised to 650m. cubic feet at a cost of \$55m. A new \$45m. pipeline is to be built from south and west Alberta to Kingsgate, 174 miles away on the U.S. border, and the Port Arthur-Kapuskasing, and Kapuskasing-Montreal-Toronto sections of the Trans-Canada pipeline should be completed by November 1st this year. Later on a spur line is to go to Manitoba and a further \$13½m. is to be spent on gathering systems in Alberta and a pipeline direct from Alberta to Winnipeg and Lake Superior.

The \$1,000m. **St. Lawrence Seaway** Project is now more than three-quarters complete, with work being concentrated on the installation of locks and building of bridges. Spring 1959 should see the waterway opened. Stage 1 of the project, costing \$400m., will make navigable to large vessels the 2,250 miles from the Great Lakes to the sea. Stage 2, costing \$600m., entails the building of three dams, a power-house and compensatory channels on the International Rapids section of the waterway to provide about 2.2m. h.p. in hydro-electricity.

Forecasts by the Canadian Good Roads Association say that the **road building boom** will continue throughout 1958. Last year, which set the twelfth consecutive annual record, the budget allocation for this purpose was 86½m. dollars, and it is expected that Canada will be spending 1,000m. dollars on roads and streets within the next two years.

The Canadian Construction Association announces that **construction** volume in 1958 will roughly equal the 1957 record level of \$6,900m.



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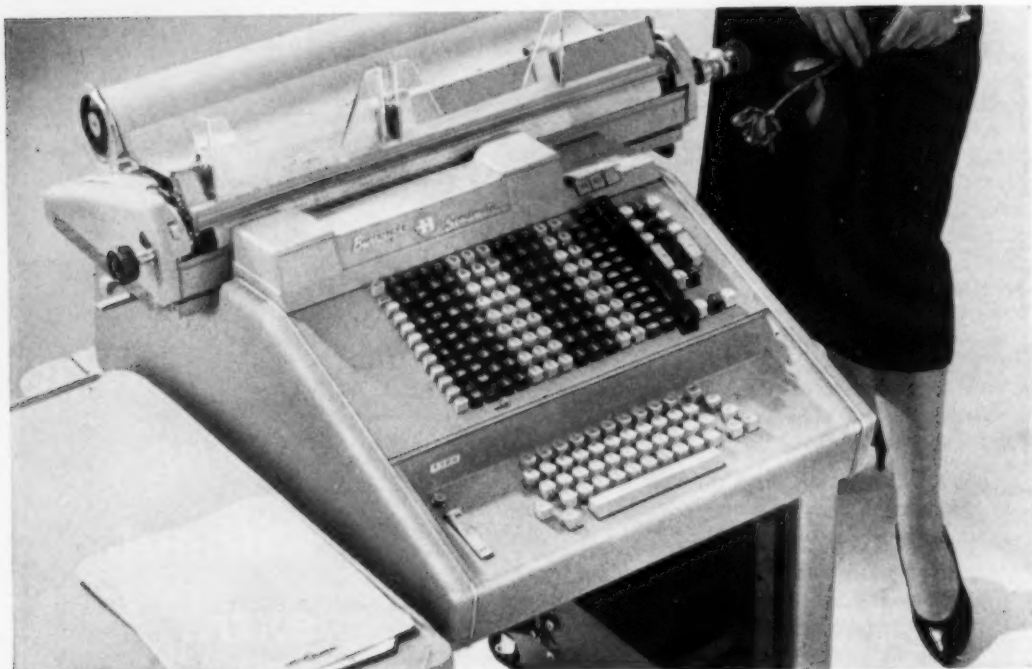
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MARCH OF BUSINESS

When Should a Board Give to Charity?

MANY boards of directors give anxious thought to the problem of how to deal with requests for support from all sorts of public and charitable causes. This point is raised by Lord Iveagh, chairman of Arthur Guinness, Son and Co. Ltd., in the foreword to a report, prepared by his company by the Economist Intelligence Unit, on how 381 British firms respond to requests for help. He adds:

"A scrutiny of the lists of donors . . . will show what an immense part is played by industry and private enterprise in these essentials of our modern life. Such donations are, in my opinion, wholly justified, because unless the whole body of the country is healthy and happy, we cannot hope that individual units will continue to prosper. But what are the standards that company boards should apply?"

Although the study does not give an answer (who would expect one?) it throws up some interesting facts. Samples:

—'Generosity' ratings (setting donations against profits) put commerce at the top of the industry groups, the drink trades at the bottom.

—The highest contribution by one firm in any one year was £105,019; the lowest £3.

—Only a dozen firms had a definite policy towards charitable donations. In two cases the amount was directly related to profits.

—Only 6 per cent of all donations was adjudged 'purely philanthropic.' The largest group (60 per cent) comprised "gifts to causes directly of benefit to the company or indirectly of benefit to its employees."

—Social services, research and education got the lion's share of industry's donations. In most cases, less than 10 per cent of the total

went to the National Trust and historic monuments, and even smaller percentages to the Services and ex-Service associations. Requests from religious causes were generally refused.

An article on pages 141 to 144 of this issue of BUSINESS discusses ways in which industry helps the arts, and the advantages to be derived therefrom.

★

Executive Art Show Tours the U.S.A.

DOES the American businessman take a more active interest in the arts than his opposite number in Britain?

A feature of the recent National Business Show in New York was the exhibition of 38 paintings under the title "From the Executive's Easel." The artists represented a wide range of industries and professions.

Sponsored by Manpower Inc., the exhibition has the blessing of the American Federation of Arts. Seven art museum directors chose the pictures at the A.F.A.'s request. Only a few of them are of industrial subjects.

Before appearing at the National Business Show, the exhibition had

been on tour for nearly six months. It will now circulate among museums, universities and trade centres until mid-1959.

★

Strike Loss Not as Bad as it Seems

BETWEEN January and November last year, nearly 8½ million working days were lost through strikes. It is a sorry record—the worst since 1926, when 162 million days were lost, largely on account of the General Strike.

But nothing is gained by over-dramatizing this figure. With a working population of more than 23 million, it means that strikes actually produced an average loss of about *three and a half hours* per employee.

Coughs, sneezes and Asian 'flu did much more than this.

★

Product Designers in Greater Demand

MORE and more manufacturers of functional products are beginning to appreciate the commercial value of good design. Recently there has been a significant change in the enquiries received by the Council of Industrial Design, which maintains

Next Month

How Profitable Is Your Business?

Simple checks which you can apply yourself to determine trends quickly

Variety Reduction Pays Off

Two case-histories—one British, one Russian—show how standardization makes big savings

a comprehensive record of staff and consulting designers.

The Council's 1956-7 report shows that the total number of requests for advice or introductions was nearly one-third higher than in the previous year. But during this period requests from the engineering industries more than doubled.

For the first time, therefore, the Record of Designers got nearly as much attention from engineering firms as from the makers of such arty-crafty products as furniture and textiles, where 'good looks' have obvious sales appeal.

Scientists Seek Pension Improvements

THE scientists' trade union—the National Engineering Advisory Committee of the Association of Scientific Workers—has made a survey of pension schemes in the engineering industry. Results are soon to be reported to branches.

The association is trying to extend the transferability of scientists' pension rights, whether in the public services (where transfer rights from one branch to another are common) or in industry (where they are not). It is in this light that the results of the survey, covering both large and small firms, will be studied.

At the same time, the association aims to foster the idea of pension schemes based on final salary.

Free Trade Know-how from Continental Expert

A TWO-DAY sales training course, described by the British Institute of Management as "the most successful in Europe," will be held at Caxton Hall, London, on March 13 and 14.

The man who will conduct it—under B.I.M. sponsorship—is Heinz M. Goldman, a sales training consultant with offices in Geneva, Stockholm and Germany. According to the programme, he has already conducted courses for more than 40,000 salesmen from 4,000 firms in 11 countries, including the U.S.A. and Canada.

Main purpose of the course is to prepare British businessmen for Free

Trade Area opportunities. Mr. Goldman says that it is based on the word 'no'—since selling, as opposed to order-taking, really begins when a customer declines.

How New Town Industry has Grown

HOW have the 15 New Towns grown since their designation (with one exception) about ten years ago? Figures in the January issue of *Town and Country Planning* show that 231,500 people have now moved into them.

Last year nearly 2 million square-feet of factory space was added. This raised the total number of new factories to 298 (10½ million square-feet) employing about 66,500 workers. A further 2 million square-feet are under construction.

The rates of industrial growth have varied tremendously. At one extreme is Crawley, Sussex. When designated in February, 1947, it had 17 factories with 1,300 employees; since then, 61 factories, with more than 10,000 employees, have been added. Total population—43,000—approaches the target of 55,000.

At the other extreme is Glenrothes, Scotland, designated in October, 1948. Then it had four factories with 1,683 employees. Today it still has four factories and the number of employees in manufacturing industry has risen by little more than 1,000 (although its population is up from 1,100 to 9,000).

How Small Firms can Use Scientists

HOW can the small firm make best use of scientific research? Some answers were given in the November, 1957, issue of *BUSINESS* ('The Research Race,' page 66). The leading article in the January, 1958, issue of *Research* provides a sort of post-script. It says in effect:

Don't employ a young graduate or first-rate research worker. *Do* employ a man of middle years who has worked in an industrial laboratory but has developed a talent or urge for liaison with production, or for administration.

Don't put him to work in 'the lab.' *Do* make him an assistant first to the works superintendent and then to the factory manager.

Such a man, says *Research*, will be able to interpret the directly applicable findings of research association and industrial laboratories which encourage their scientists to publish papers in technical journals. He will bring to trouble-shooting an intelligence trained in the fundamentals of scientific investigation.

The journal's final comment has, perhaps, a note of special pleading: "He may one day succeed the factory manager himself, for, other things being equal, his scientific education will always give him a lead."

Do Executives Need the TV Manner?

RECENTLY there has been controversy over the value of TV personalities as politicians—and vice versa. Businessmen, too, seem to be getting more deeply involved in the new medium.

Some have taken part in programmes dealing specifically with industrial matters. But few—so far—have broken into the entertainment field.

An exception is Sir Frederic Hooper, chairman and managing director of Schweppes Ltd. Already an experienced broadcaster, he recently joined the panel of the TV quiz 'Who Said That?'

It is unlikely that many businessmen will be able to follow his example. Sir Frederic's wide interests and colourful personality place him in an unusually strong position. But the rewards are tempting.

For the company whose top man gets on TV there is considerable prestige value. And who can measure the potential impact on shareholders, union representatives and works committee members?

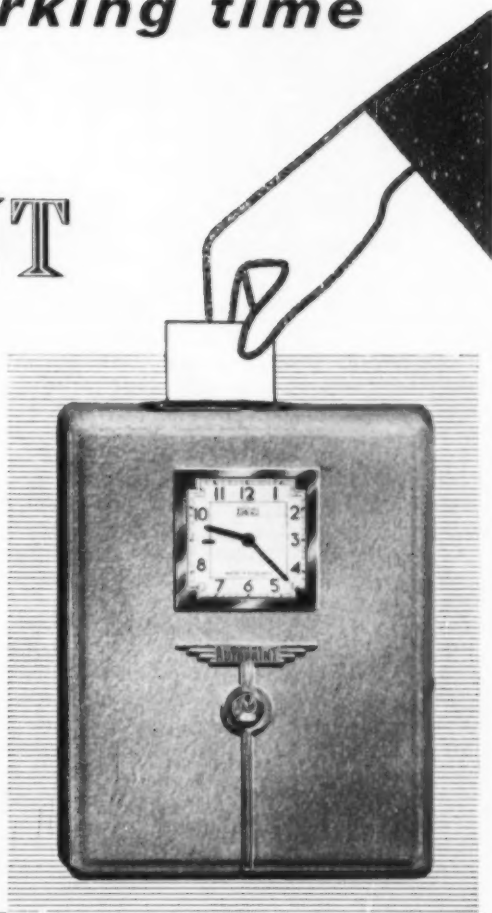
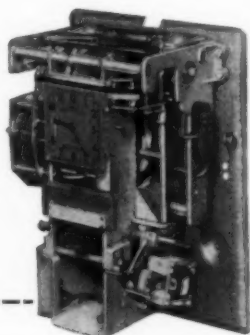
Sale of Know-how not Taxable

THE Inland Revenue has tried on several occasions to establish that the sale of business know-how is chargeable to tax. It has claimed

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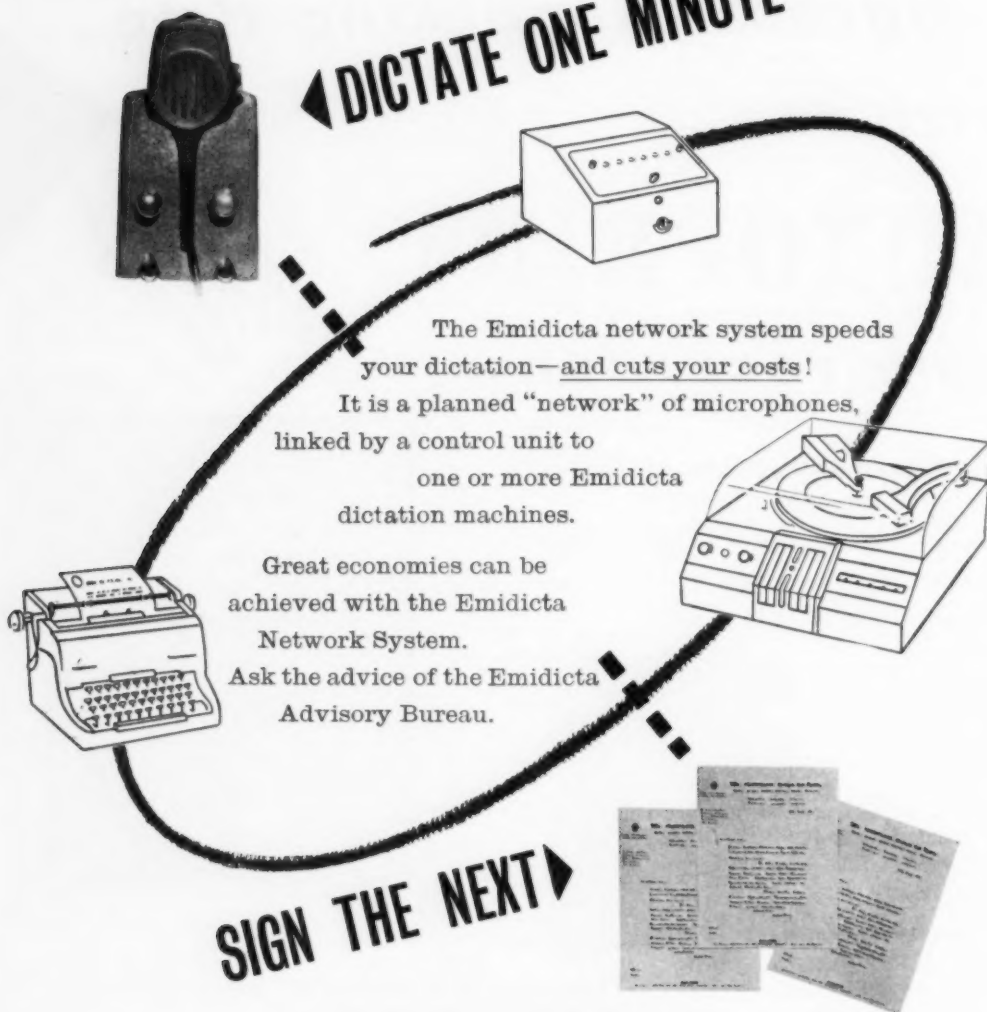
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BUSINESS

that a firm selling know-how receives payment from the provision of services and not from the sale of a capital asset.

In a recent case, the Courts decided in favour of the tax men. But the case was taken to the House of Lords, where the Courts' verdict was reversed by a majority vote.

The trouble had arisen from the fact that know-how cannot be passed to another party without a certain amount of training being given by the vendor. The Lords held that the element of service in this training was a consequence of the sale and not a part of it.

Included in the know-how for which the purchaser had paid a lump sum were 'secret processes' and other information. But the selling company had also agreed to supply technical and management services at an annual fee. In respect of this they admitted tax liability.

It seems, therefore, that know-how is now recognized as an asset, which the owner can sell without providing 'services'—as long as the transaction does not extend to the provision of annual services. If an agreement includes such things, the sale of know-how should be stated separately, and there should be clear exposition of what the sale involves.

Letters

Advantages of Co-partnership

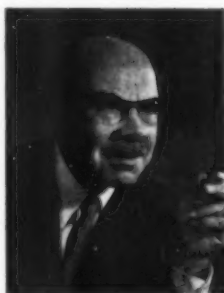
Sir,

I read the articles in your September issue on 'Employee Shareholding and Profit Sharing' with considerable interest. It is a subject to which I have given not a little thought.

There are three vital problems confronting us today: how to conquer inflation; how to increase productivity; and the third, which is not so apparent at the moment, how to establish a new kind of society.

I believe there is an urgent need to create a nation which is a great partnership where, as in war, everyone is on the same side of the fence,

PEOPLE PRODUCTS PLACES 1



KNIGHTHOODS were awarded in the New Year honours list to Holford Reddish (left), chairman of Rugby Portland Cement Co. Ltd., and Australian-born Walter Worboys, director of I.C.I. and chairman of the Council of Industrial Design. The companies of both these new knights have Commonwealth-wide interests, and both have employee shareholding schemes.



BIG ATTRACTION at the Dominican Republic's International Trade Fair is a free zone where visitors can buy duty-free goods from all over the world. The £14 million Fair was built in 1955 and has been so successful that it has been made a permanent exhibition centre.



MOSAIC MURAL at the Loughborough factory of Genatosan Ltd. was designed by local art student John Willats. It forms an unusual approach to the newly-built welfare and office block. Mr. Willats is also working on a sculpture to decorate the courtyard.

all striving to improve our standard of living both culturally and materially.

What is the alternative? For nearly 40 years government legislation has tended, at varying speeds, to lean more and more to the left. In fact there seems at times to be keen rivalry between governments of alleged opposite views as to which can give away most for nothing. The only difference is how quickly or how slowly we reach the inevitable. The end is the same.

Although I believe in co-partnership even if it is limited to a single organization, there can be no doubt, as I see it, that the full benefit cannot be felt by employee-shareholders unless the rest of industry is functioning on the same lines. In short, they are, through increased efficiency, providing benefit to others who are not throwing the ball back.

How will co-partnership cure inflation? In an atmosphere of fair competition—which means the abolition of monopolies—profit-making demands intelligent production which, in turn, means higher production and lower costs.

Intelligent production means also non-resistance to improved methods. If co-partnership were widespread, why should anyone resist the means of filling the order book and making a greater volume of profit? Fear of redundancy is a bogey, but there should be none if improved methods are introduced at the right time which is when business is booming.

It is not suggested that co-partnership alone could completely cure inflation, but it would go a long way towards it, and if adopted nationally would open up before us the prospect of a new society, in which masters and men could climb together to a happier and more fruitful life.

P. V. G. VOWLES

Diss, Norfolk

(The forthcoming book on 'The Challenge of Employee Shareholding' by George Copeman, to be published by Business Publications Ltd. in association with B. T. Batsford Ltd., will be reviewed in the April issue of BUSINESS—ED.)

PEOPLE PRODUCTS PLACES 2

FLATTED FACTORY which was opened in Birmingham last November to accommodate 47 small manufacturers is still partly empty, in spite of a flood of applicants. Reason is that the Corporation is reserving space for firms who will be displaced by Birmingham's slum clearance programme.

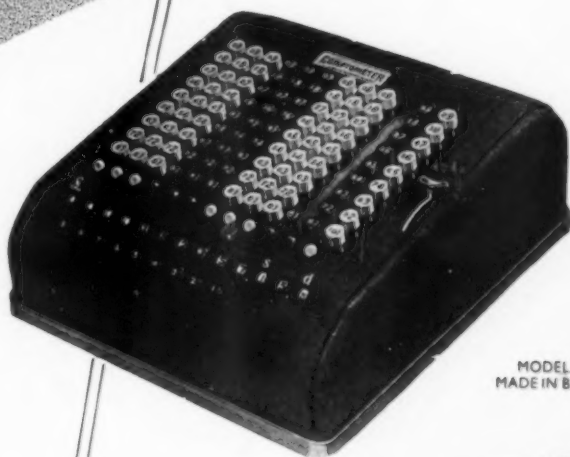


DESIGNER Robin Day, 42, has been awarded the Society of Industrial Artists' Design Award for 1957. Last year he had the distinction of having two items among the twelve 'Designs of the Year'.

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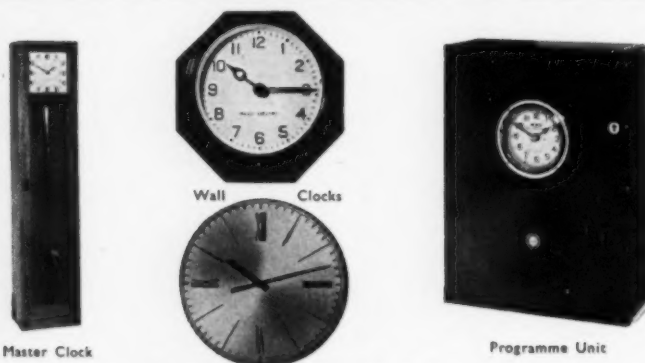
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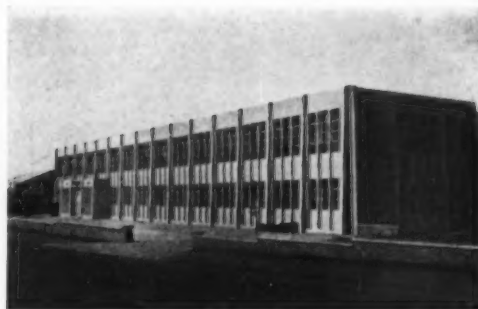
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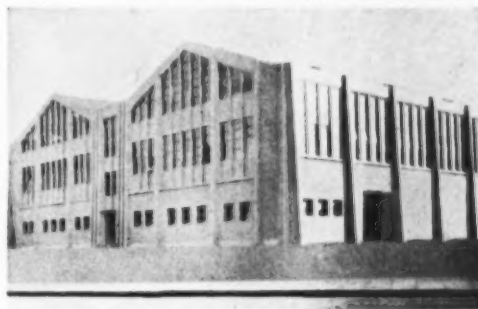
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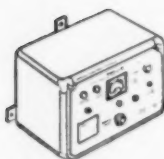
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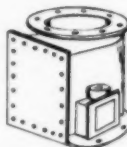
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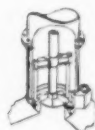
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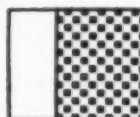
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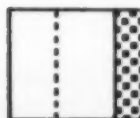
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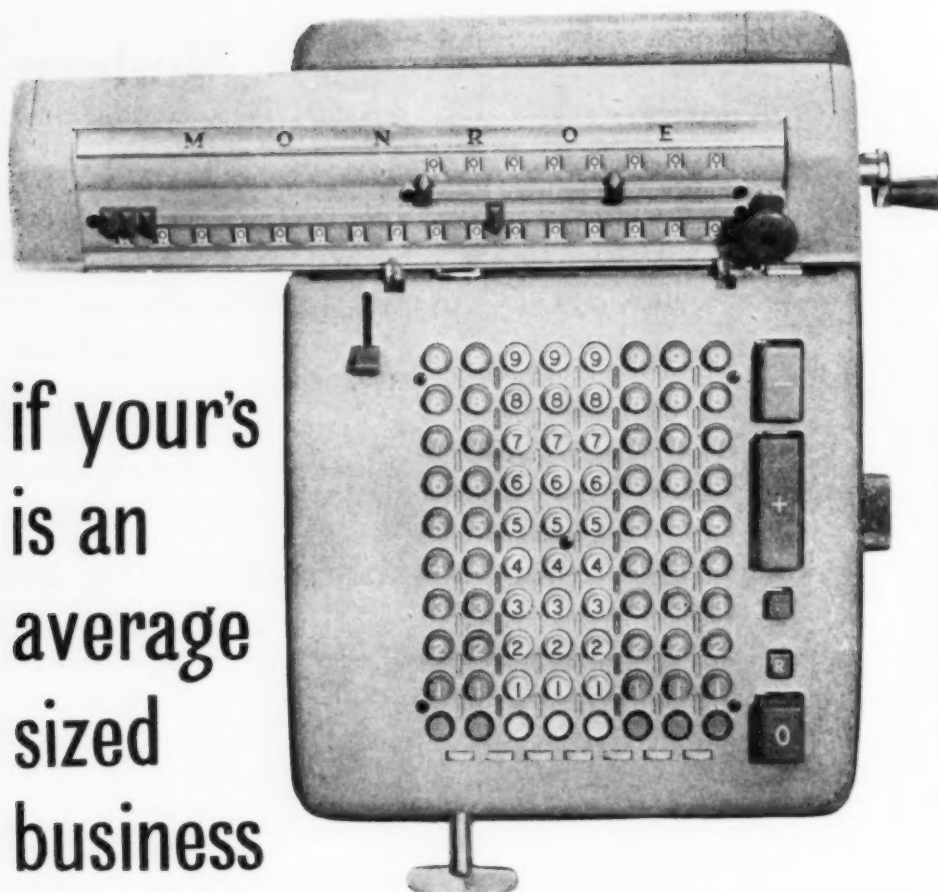


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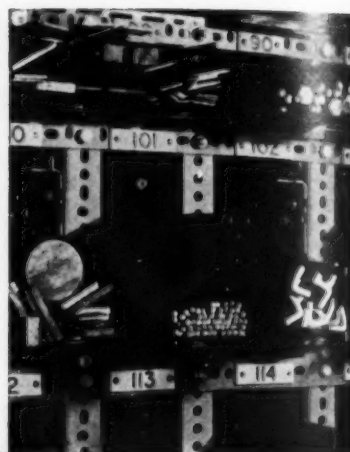
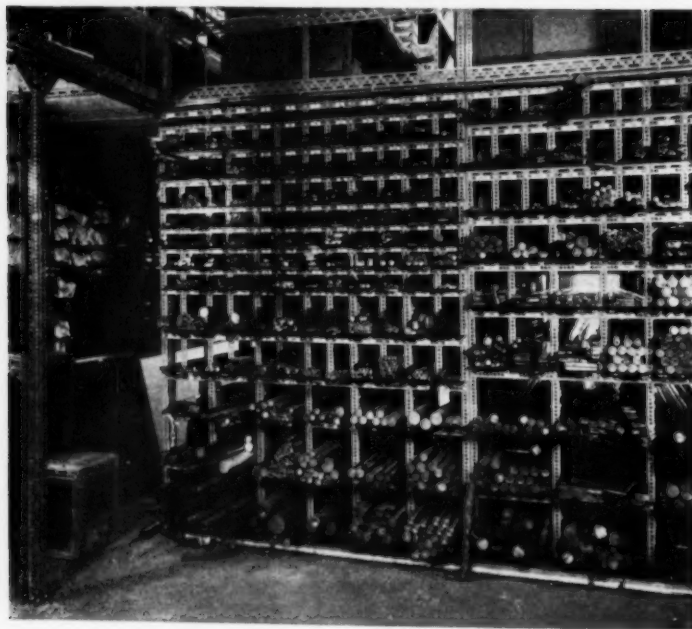
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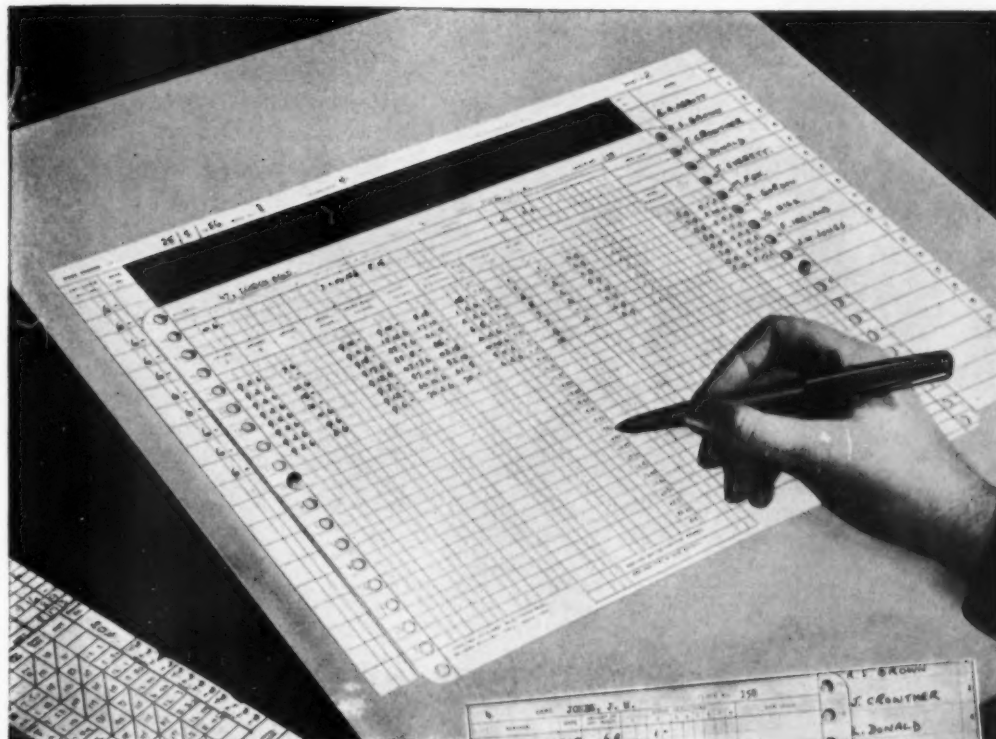
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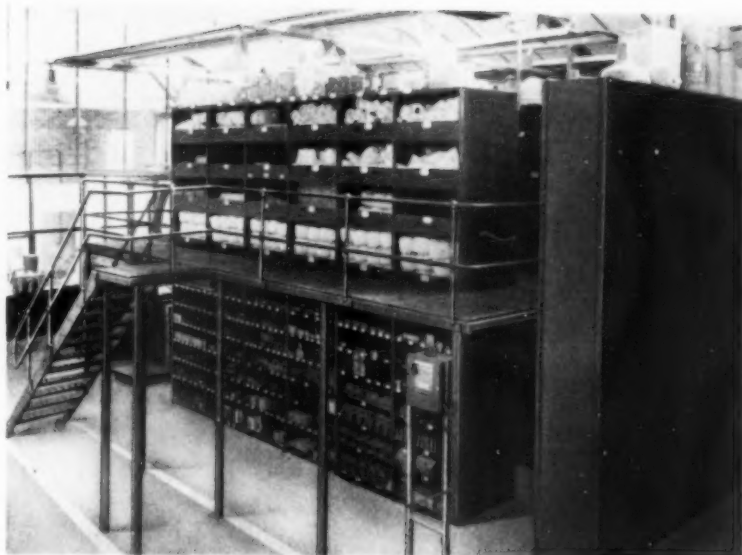
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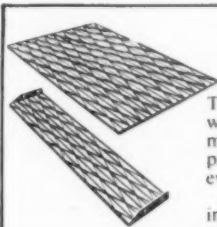
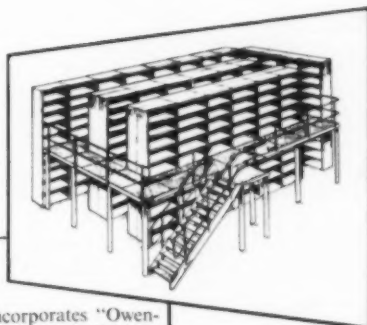


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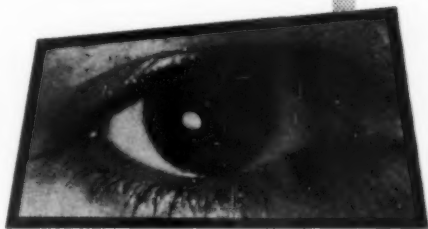
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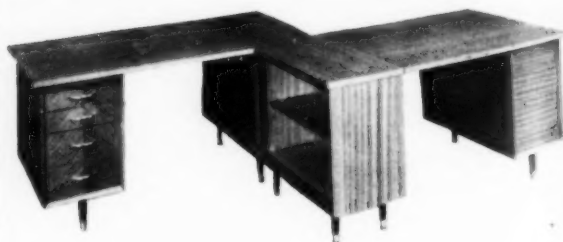
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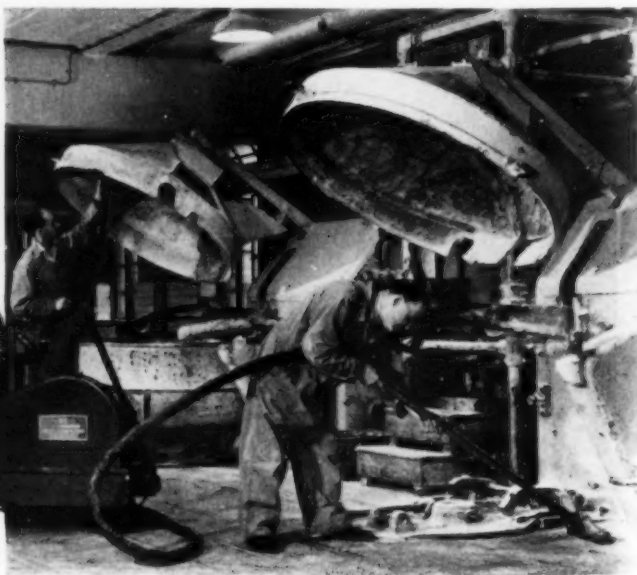
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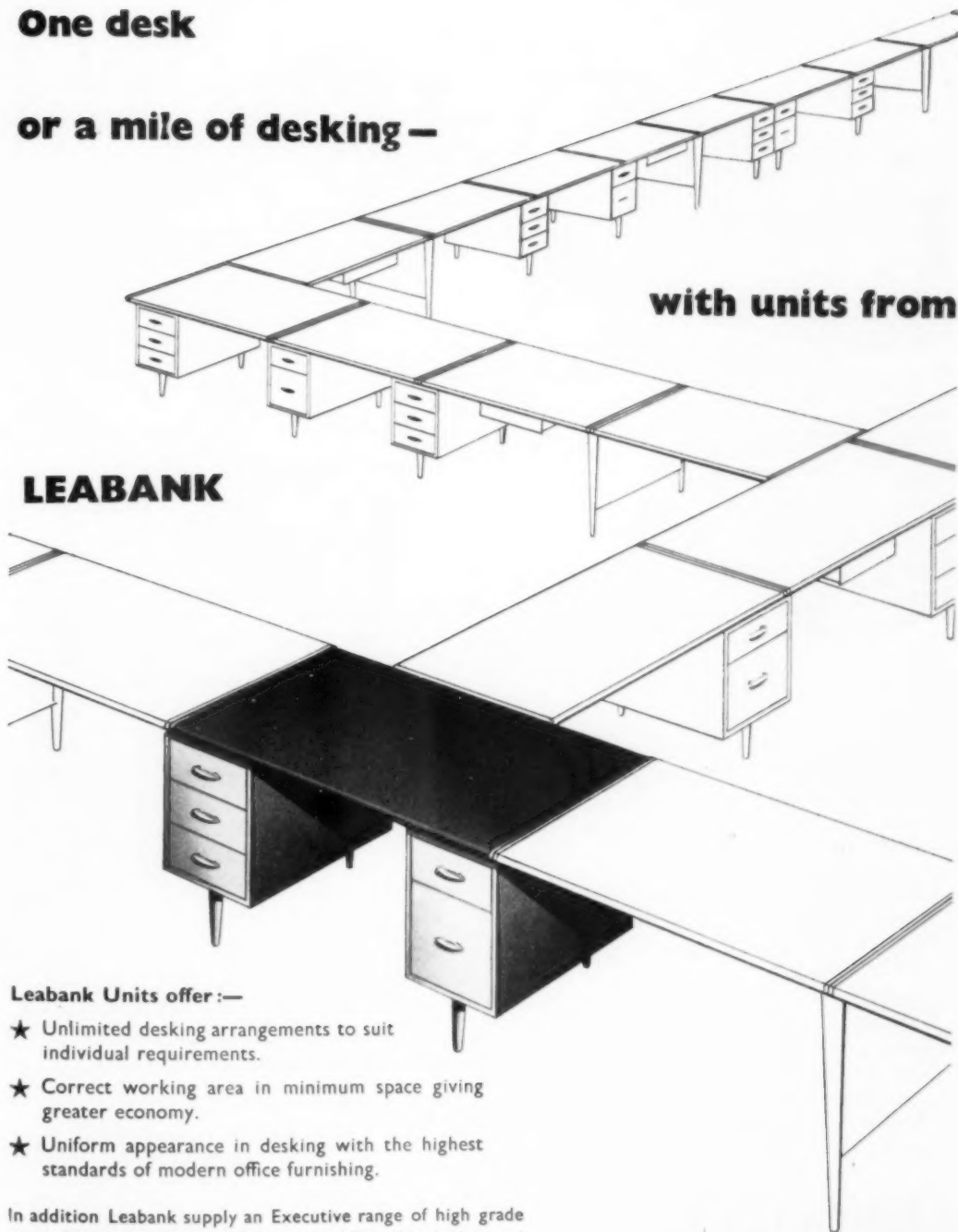
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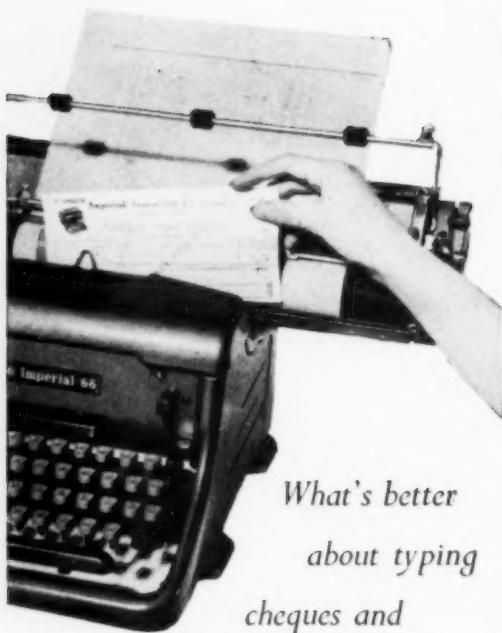
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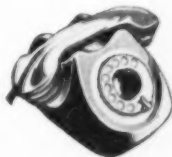
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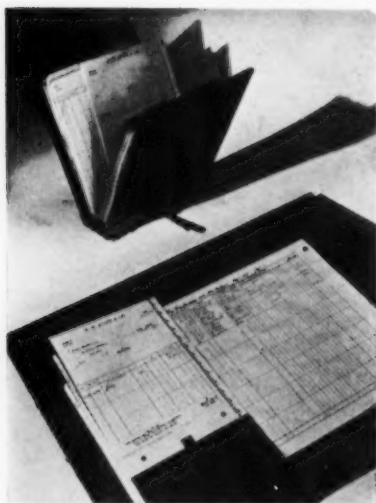
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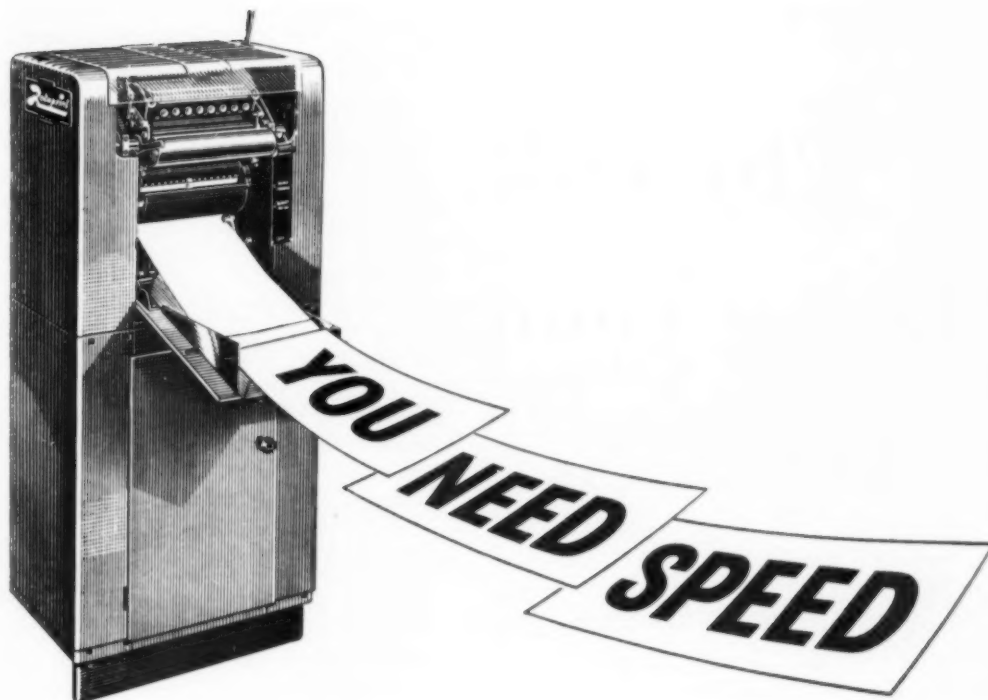
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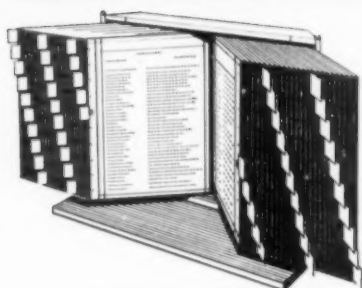
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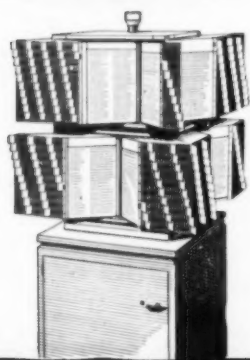
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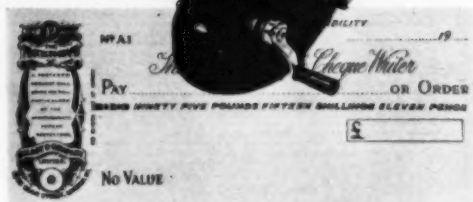
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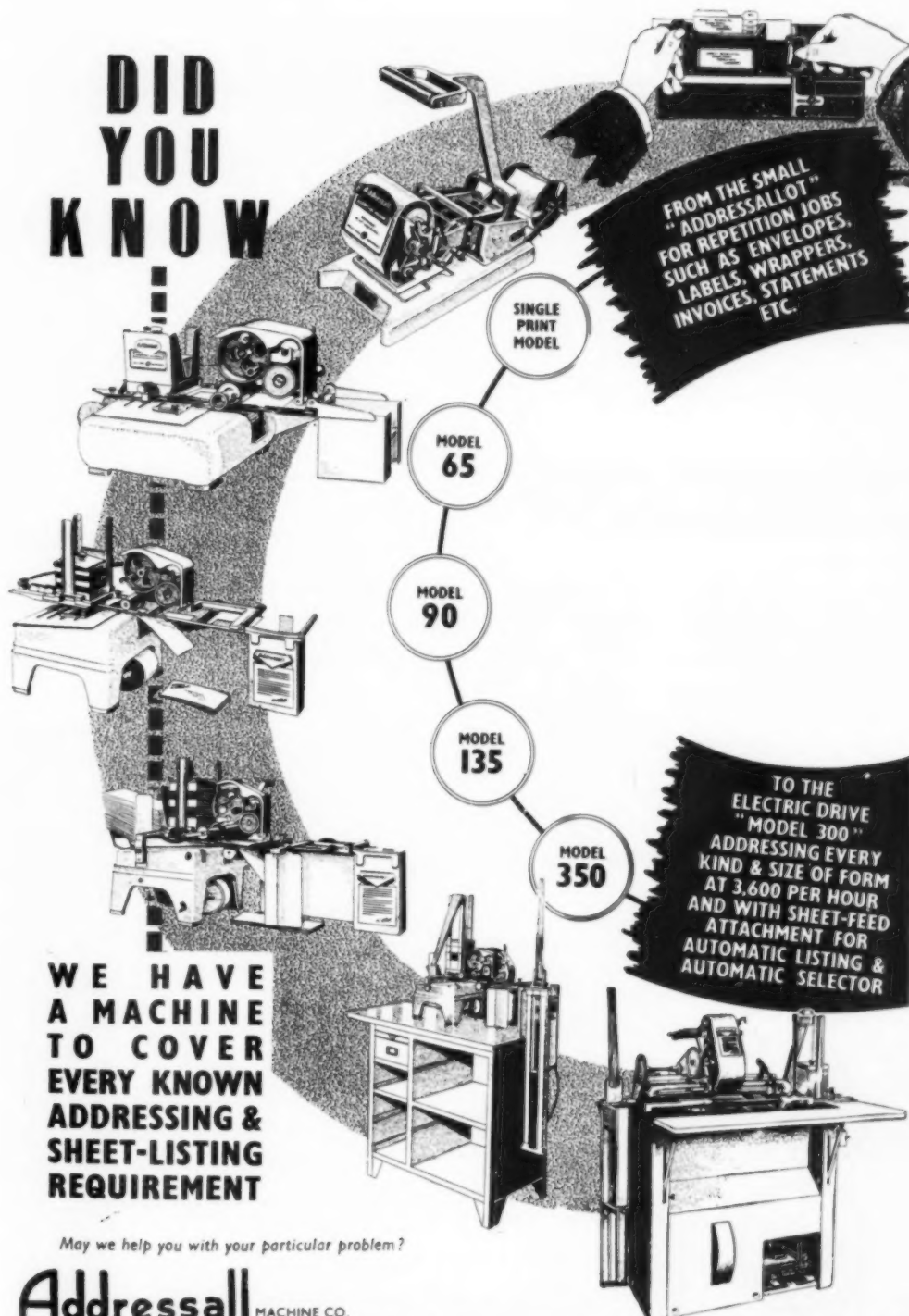
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HALF-A-DOZEN business executives sit in silence at a special table, solemnly passing notes to one another. In front of each of them is a printed card or a handful of marbles. It is not a parlour game but a piece of scientific research.

Last month's article on the work of social scientists emphasized that the investigations were almost invariably made in the field. However, there are a few exceptions. The table game is one of them.

Based on American experiments, it is used by the social sciences department of a Scottish university. Scores of local businessmen have acted as guinea-pigs.

The table is round. Plywood panels divide it into six sectors. The only way in which the guinea-pigs may communicate is by passing handwritten notes through flaps in the partitions.

Before them are panels bearing identical sets of six symbols. Each man is given a card on which five of the symbols appear. A different symbol is missing from each card—thus only one of the symbols is common to all cards. The group have to find out which as quickly as possible.

By blocking some of the flaps, the scientists in charge of the experiment can vary the possible lines of communications. There are a number of permutations. The most important are: (1) the six men form a circle, with messages passing in either

direction; and (2) five of them communicate direct with a chosen leader but not with each other.

Nearly always it is the second arrangement which enables them to find the answer in the shortest time. Soon they tumble to the fact that each of the five 'subordinates' has only to indicate the symbol missing from his own card—the old principle of reporting variations from clearly-defined standards.

But things are different in the next part of the experiment. For the marbles which replace the symbols are not of simple colours like red, blue and yellow, and to identify them in written messages is difficult. Under these conditions the 'circle' system of communication and consultation is appreciably quicker than the traditional leader-and-subordinates system.

What does this prove? The answer, of course, is 'nothing'. The experiments, repeated time and time again with different groups, merely support some practical research into the ways in which firms have to adapt traditional forms of organization when they move into a period of rapid technological change—and their executives begin to grapple with unfamiliar problems.

The scientists hope to establish a relationship between the results of the laboratory experiments and the conditions actually observed in local firms which are developing new

manufacturing activities. If they do, it may help to open up some profitable lines of research into management practices.

The businessman may think—understandably—that playing with marbles is pretty remote from the day-to-day problems of management. But he probably feels the same way about the progressive changes which have taken place in the principles laid down by such 'management theorists' as Taylor, Urwick and Drucker!

Stony Ground

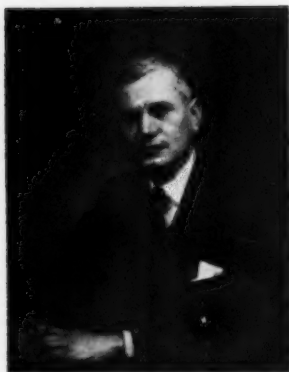
NEW ideas in communication sometimes look better than they are.

The management of one large firm were anxious to encourage their employees to take an interest in industrial investment. After considerable thought they decided to produce a brochure describing in detail the opportunities available to small investors.

It became a best-seller. Requests for copies were received from the management of many other companies.

But from their own employees there was lukewarm interest. At one of their factories, employing several thousands, only one employee took the trouble to make further enquiries at the personnel office.

Case-history of an internal watchdog against waste



ABOUT THE AUTHOR

Mr. Taylor joined H. J. Heinz Co. Ltd. in 1934, with an accountancy background. He was office manager of several branch offices, then became deputy company secretary after the war. He was appointed manager of the Internal Audit department when it was formed in 1956, and is now personal assistant to the managing director

How to Check

IT was two years ago that the managing director of H. J. Heinz Co. Ltd. decided an internal audit department should be formed. At that time I was deputy company secretary, and it was decided to appoint me as manager of the department. Several months afterwards the department was actually set up.

During the interim period the department's terms of reference had been drawn up; this is another way of saying that my job description had been drafted and circulated amongst the directors, and finally approved.

It was decided as a matter of company policy that, in its formative period, the department would report to the managing director. This in my opinion gave the green light to the intention not to confine internal audit to the traditional and restrictive examination of books of account and supporting vouchers.

As a point of interest, the framework of the job description was provided by:

- 1—The *Statement of Responsibilities of the Internal Auditor*, issued by the Institute of Internal Auditors, New York;
- 2—The *Modern Approach to Internal Auditing* — an excellent pamphlet issued by the Association of Certified and Corporate Accountants.

That job description was invaluable to me during the early days of the department's development. Inevitably the right to comment on certain aspects of operations under audit, particularly branch house audits where a number of separate and distinct functions are involved, was challenged by the departments controlling such functions. Such a situation was met by inviting the challengers to read my job description. All

audit department, set up by a company as a
and inefficiency

Company Efficiency

by D. Taylor

opposition died when faced with the following:

- *Maintains familiarity with company policies, plans and procedures, and recommends amendments, as required to facilitate the achievement of overall company objectives by management.*

- *Designs and carries out surveys to ascertain that the company's policies and instructions have been satisfactorily passed on and, as necessary, guides departments in their interpretation and execution.*

- *Examines department procedures, statistical data and records to determine their adequacy and effectiveness in the light of current company policies and instructions.*

- *Surveys the general pattern of control methods and procedures to determine that there is proper co-ordination between departments, designed to achieve company objectives with the greatest economy.*

To provide the necessary staff to commence operations, two members of the controller's division were trans-

ferred to the new department. Both had served the company for many years.

The senior of the two was the branch sales office auditor, reporting to the chief accountant. He was formerly a senior branch office manager and thoroughly conversant with branch house audit techniques.

The other was implementing the internal check systems then in operation. His knowledge of the company's chart of accounts was, and still is, so far as I know, almost unrivalled. His knowledge and experience gained in various sections of head office accounting group has been invaluable in the development of audit programmes.

We opened shop. Our assets then were:

- Job description

- Two stalwarts with auditing experience

- Floor space allotment

- Several attendances at meetings of the London Chapter of the Institute of Internal Auditors

- Two textbooks:

 - Industrial Internal Auditing* by W. A. Walker and W. R. Davies;

 - Internal Auditing* by W. W. Bigg and J. O. Davies

- Enthusiasm

- An ex-deputy company secretary. Our liabilities were nil.

The ground had been prepared by an organizational bulletin outlining very briefly the function of the new department. This was unique and served to emphasize the importance and status of our work. It was circulated to managers and heads of departments. Now came the 64,000-dollar question: Where do we start?

It was a choice between a departmental audit or a functional audit. We settled for a functional audit, and



The prime objective was to check that existing procedures were being followed; secondly, to appraise them and suggest where they might be improved

you may be interested to know the reasons which governed the decision.

The Institute's *Statement of Responsibilities* was very much in my mind at that time. I felt that it reflected almost exactly what the managing director required of an internal audit department. Objective 2 in the Statement is "the furtherance of the interests of the organization, including the recommendation of changes for the improvement of the various phases of the operations". A functional audit would go a long way to achieving such an objective.

I wanted as many sections as possible in the organization, especially the non-accounting ones, to feel the impact of the new department as soon as possible—that we were in fact in business. In this context I quote from a talk given by W. R. Davies (U.S. president of the Institute of Internal Auditors) to the London Chapter last year. He said:

"Much has been written and many speeches given in recent years concerning this new development. Some call it 'Management auditing;' others refer to it as 'Auditing the operations'. In my opinion, either one will do, so long as we mean to refer to a company-wide audit programme that aims to provide a complete inter-departmental service to management.

"This means to me that our detailed annual audit programme should be composed of individual assignments that reach into all departments of the business, besides the accounting and treasury departments, such as production, sales, purchasing, engineering, and transportation.

"As might be expected, when you do this, you will soon come to realize

that there are many points of connection between these individual audits, just as there are bound to be points of contact between the departments themselves. Thus, through his audit programme the auditor comes to understand the interdepartmental relationships and, in his work, can cross over departmental lines.

"The result is that his audit recommendations are not restricted to the point of view of one department, but rather are made from the point of view of the overall company profit picture".

I felt that if we had undertaken a departmental audit we should, by reason of our inexperience, have quickly fanned out into other departments, because few are so self-contained as to be affected by only one function and not to overlap into others. Supposing we had decided to audit the accounts payable section (this has since been done) we should, or could, have been involved (to mention only a few examples) in the contracts section of the purchasing division, storage and general administrative departments, material control, general accounting, and cost accounting.

So we looked around for a function or operation which gave a wide coverage of departments and divisions, and which was controlled by a written official procedure or series of procedures, and in which considerable sums of the company's money or goods could be involved.

Our choice fell on the functions related to the receipt, storage and issue of raw materials—engineers' stores, general stores, machinery and equipment, stationery, etc. In this

way we felt it would be possible to control our programme.

The audit commenced at the factory gates where the goods arrive (company property in outside storage depots was not covered by the audit) and ceased at the point of transfer to a user department and the commencement of the build-up of authority for payment.

So far so good. . . . We had the title of the functional audit—"Receiving, Storage and Issues".

The next step was to plan the audit. We drew up our objectives or purposes—we described it as 'Intention'—which read:

"To examine and appraise the procedures and systems employed in order to ensure that:

1.—Acceptable modern methods relating to the handling and recording of receipts, storage and issue of supplies, equipment, inventory items are used and that these are constantly being reviewed to keep pace with changing conditions caused by the growth of the company;

2.—There is complete control and security exercised over the company's property;

3.—Notification of the receipt and issue of goods and notification of stock levels are given to the departments and sections concerned as quickly as possible;

4.—Accurate records of receipts, stock in stores, and issues are maintained.

The layout of the programme was as follows:

Section 1. Statement of intention.

Section 2. List of forms in use.

Section 3. Applicable standard procedures in use.

Section 4. Questionnaire for the guidance of staff engaged on the audit.

For section 4 we familiarized ourselves with the procedures. Then, sentence by sentence, we combed through them with the object of framing questions designed to produce evidence or answers from departments operating the procedures which would prove that they (the procedures) were being properly carried out.

In addition, we added, where applicable and where necessary, questions designed to prove the accuracy of stock-keeping records which in turn were checked against physical stocks of stores and raw materials.

Our prime objective, as I have said, was to check that existing procedures were being followed; secondly to appraise them and comment upon departures from them. We also felt free to make suggestions both critical

and helpful on procedure amendments.

In order to give some idea of the range of questions which appeared in the programme, here is a sample taken at random.

Under a sub-heading 'Receiving documentation' we asked:

Are suppliers carrying out the conditions of sale detailed on purchase order forms?

Is the delivery date being met by suppliers to permit the most economical use of Heinz labour?

Are there duplicated recordings made on purchase order forms?

Under a sub-heading 'Storage at Heinz locations' we asked:

Are efficient and repeated stock checks maintained?

Are adequate protection methods adopted with items which could contaminate or injure staff, likewise ingredients?

Are floor capacities posted?

Under 'Issues—Administration' we asked:

Are maximum and minimum ordering levels recorded on bin cards?

Are they observed?

Security was also covered by such questions as:

What action is taken to ensure all requisitions, transfer and credit notes reach clerks for conversion into monthly usage vouchers?

What precautions are taken to protect (a) goods awaiting transfer to storage or delivery points, and (b) goods in stores?

We were almost ready to start, but there was just one thing left to be done. I felt it would help to get down on paper a chart which illustrated the progress of multi-copy forms used in the function to be audited. This enabled us to grasp quickly the sometimes rather involved flow of docu-

What is Internal Auditing ?

In some companies the internal auditor does little more than check figures and see that honesty prevails. At the other extreme he presides, like a resident management consultant, on a special pedestal overlooking the O and M man or even the production engineer.

The true usefulness of this comparatively new profession lies somewhere in between. It has been defined as an independent appraisal for management of accounting, financial and other operations . . . an internal control, which measures and evaluates the effectiveness of other controls.

The internal auditor should have no executive functions. Having found that a system no longer serves the purpose for which it was installed, he cannot himself install a new one. That would mean getting a vested interest in the very thing he is supposed to be impartial about. It is up to O and M or work study experts—perhaps even outside consultants—to step in and put right what the internal audit has shown to be wrong.

Even in the U.S., internal auditing is a comparatively recent concept. The Institute of Internal Auditors was only formed in 1941. Today it has some 4,000 members in the U.S., representing nearly 2,000 firms. In this country a London chapter was set up in 1945, and now has nearly 100 members.

ments, and to decide where and what check points should be applied.

At last we were ready.

I was very careful to notify my own line of control—the managing director—and the factory line of control of the date when we intended to make a start. In my opinion nothing is gained by commencing an audit (of this nature particularly) without first notifying all concerned. In fact, pre-advise of a visit for audit purposes is, I think, appreciated and enables one to start off in a friendly and co-operative atmosphere.

In this particular instance (and mainly because those employed in the area of operations had little or no experience of internal auditors and their activities) I made a point of asking the factory manager and factory controller to have a chat with me at the commencement of the audit. They were able and willing to tell me what they thought were the weak links in the chain and the problems inevitably brought about by rapid growth. They indicated that our assistance in straightening out some of the knottier problems would be appreciated.

This initial approach, conducted in a friendly atmosphere, was good for morale. Good for theirs because they were made aware that we were not proposing to attempt to teach them their job, nor intending to send the whole set-up crashing to the ground. Good for ours because we had been made to feel welcome as part of the team.

The audit proceeded pretty well along the lines we had envisaged, except that we had constantly to

remind ourselves of the intention of the audit.

We stopped short at the point where the raw materials entered the production departments, or where factory stores were handed over by the storeman against a requisition, or equipment purchased against an appropriation was passed to the installations and maintenance departments, or put on a lorry for dispatch to our Wigan factory.

Had we not clearly laid down and strictly adhered to our intention we might still have been engaged on the audit to this very day.

As it was, our coverage was extensive (on reflection, perhaps too much so). To give you an idea of the ground which was covered, here is a list of the sections and departments represented at the series of meetings held to discuss the draft audit report:

- Factory Stock Records;
- Engineers' Stores;
- Factory Controller;
- Office Service;
- Merchandising;
- Factory Stores;
- Factory Engineer;
- Cost Accounting;
- Advertising;
- Material Control;
- Storage departments (raw materials, ingredients and packaging materials).

During the course of the audit we travelled with barrels of vegetables in brine from the factory gate to the barrel park and from the barrel park to the receiving point in the produc-

tion department. We followed trailer loads from packaging materials storage sheds to the filling and labelling departments, and we observed the issue of engineers' stores against maintenance departments' requisitions. We compared physical stocks of raw materials against recorded stocks. We appraised the administration of the various departments and the efficiency and ability of the supervision. Fire appliances were examined. Checks were made to ascertain if there was a duplication of forms used and if their routing was the shortest distance between two points. They were also checked for layout and information.

We wanted to know how often weighing scales were checked. Where goods were received pre-packed in a container specifying the contents' weight we checked that as well. At all times we were most careful not to create the wrong impression, particularly when, for example, we felt it was in our province to appraise the method and equipment used to handle the materials coming into the storage sheds.

It must be emphasized that once the internal auditor moves out of the restrictive field of voucher checking, he must also accept the responsibility for getting to know and keeping in touch with a wide range of subjects, particularly those affecting his company's type of business.

Hence his value to his company in his job, and as potential material for top management training.

At length our enquiries came to an end. We then had to decide the best way of dealing with the mass of



Nothing is gained by commencing an audit without first notifying all concerned. Notice of a visit for audit purposes is appreciated and enables the investigator to start off in a friendly and co-operative atmosphere



"The audit commenced at the factory gates where the goods arrive . . . and ceased at the point of transfer to a user department and the commencement of the build-up of authority for payment"

information we had obtained.

Obviously the first thing to do was to write a draft report, but should it be (1) a report covering, in an all-embracing way, the function audited irrespective of division, department, or section; or (2) separate, shorter reports, covering the function, but relative only to the separate departments or sections? We decided on the second.

The next question to be answered was: How do we communicate the report to all concerned? Do we make some copies and send them to the director in charge of the division, or to someone else at a lower level, and let them sort it out?

We felt the answer was to call together representatives of each department or section at a series of meetings held for the purpose of considering the draft report. It would have been possible for the job to have been done by calling a single meeting for this purpose at which all the representatives would have been present. But we rather boggled at the thought of controlling the meeting, and the possibility of its becoming a sounding board for interdepartmental feuds, with individuals wanting to air a personal grievance.

We decided to hold separate meetings for each group. Each representative was given a copy of the report applicable to his department or section at the meeting. In fact we held three separate meetings which passed off without incident, and with more or less a general acceptance of each report by all concerned. Where, in the opinion of those present, we had overstated a situation or were a little off centre in our conclusions, we made the necessary alterations to the script. Always we stated facts which, if challenged, could be established beyond question.

The reports as agreed were copied and distributed to everyone who had been present at the meetings. As before everyone received only the portion relevant to their participation in the function. In addition, each factory manager received copies of the individual reports sent to all those under his control. The factory controller also had a set. So did the director of manufacturing and the managing director. Everyone was in the picture, but one thing remained to be done. I felt it was necessary to write an over-riding confidential report to my chief, making observations and recommendations which were for

Board consideration and top management action only.

We learned many valuable lessons and probably made many mistakes in the course of this audit, but it was fun and we were very heartened by the subsequent action taken to implement our recommendations. Incidentally, a month or so after the reports had been distributed we combed through them and made a list of our recommendations which was sent with the department's compliments to the factory managers—they being the persons most likely to initiate action. These aide-memoires were appreciated and used. We received from time to time (and they were not asked for) progress reports on the implementation of the recommendations.

I suppose one of the questions which is likely to be put is: "Are we satisfied with the results achieved by the audit?" The response has been good but, because some of the recommendations were pretty sweeping and are still in course of discussion, we cannot claim a 100 per cent success. Nevertheless, the department is still very much in being, and top management, at any rate, are convinced it is doing a worthwhile job.

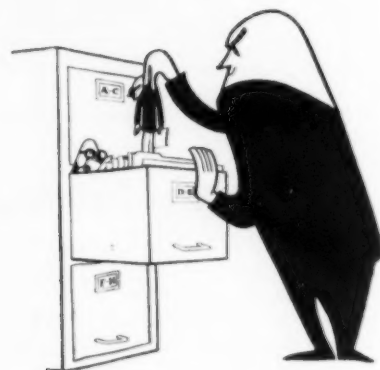
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★ Ten ways to petrify progress

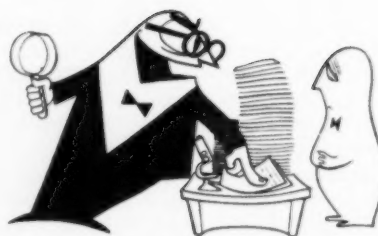
How to Kill a



Shoot first—ask questions later. Catch new ideas when they're in the vulnerable embryonic stage. A swift, snappy objection will bring the idea to a standstill. You can then pick it up, examine it closely and remove the vital spark



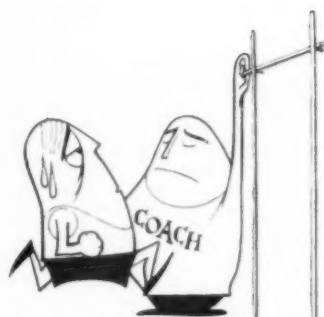
Keep subordinates in their places. A job for everybody, and everybody hard at his job. Keep them in tight compartments and their ideas—if any—will die for lack of air



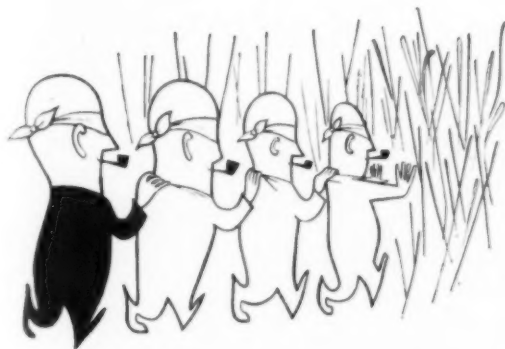
Point out the microscopic flaws. So the new patent package for persimmons could earn an additional \$5 million for the company? Maybe so—but be sure to point out that the patent will expire in 17 years. Then, too, the persimmon trees may become diseased, or the persimmon producers may demand a larger share of the profits. If you can conjure up enough difficulties, the project may well be postponed

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Good Idea

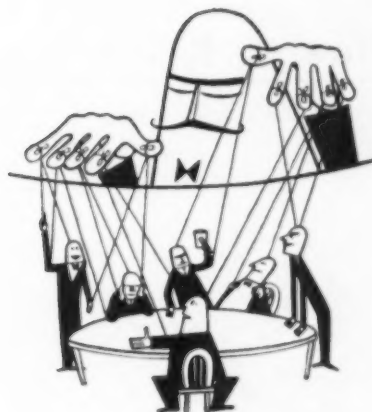


Set standards impossibly high. A plan to cut office costs 3 per cent? Too piffling even for discussion. The only plan you will entertain is one that will cut all costs at least 30 per cent, hike prices, and ensure increasing dividends for the next 25 years

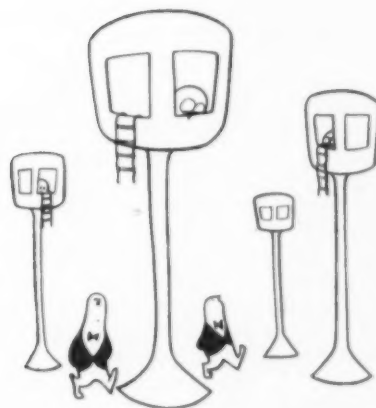


Follow accepted practices. Has the proposed approach ever been tried before in your industry? If not, it can't be much good. Better stick to the tried-and-true: follow the lead of your industrial confreres (even if they're heading straight for oblivion)

FEBRUARY, 1958

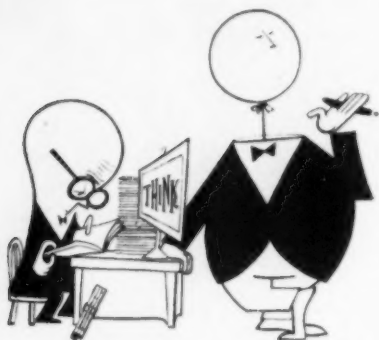


Make all the decisions—nobody else knows how. You may, however, put your subordinates through the motions of a democratic discussion. After a few practice sessions they will get the point, and you may then rely on them not to voice a single unwanted or unexpected idea

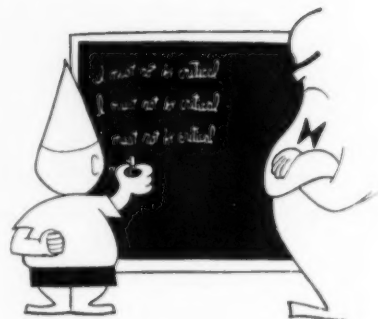


Keep your job to yourself. Don't discuss your job; don't tolerate questions; above all, don't divulge your problems. It's true that others might be able to help you, but can you trust their motives? No, far better to struggle on in isolation. Your tower may not be pure ivory, but at least it's your own

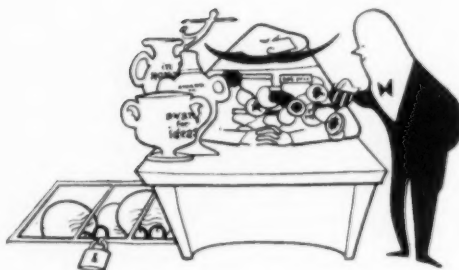
How to Kill a Good Idea Continued



Hire an expert to do your thinking. Nobody can really be trusted with a problem except a man who has made a lifetime study of the subject and knows exactly what not to do. And what could your other employees offer—aside from common sense, insight, and experience in your business? Another advantage of having one man do all your thinking is that you can easily fire him if he starts getting too original



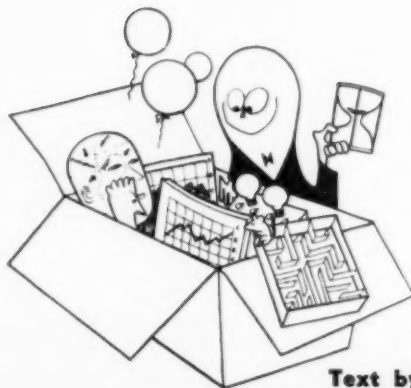
Permit no criticism. It's bare-faced treachery to question so much as a single routine established by the Founders—who have long since gone to their reward. (If they were still around, they'd be making changes—but that, of course, is a different matter)



Snatch all the credit. Despite your severest squealing, some insensitive persons may continue to come up with new ideas. In these extreme cases, your best policy is to accept the ideas, but proclaim them as your own. The chances are you won't be bothered again—at least not by the same individual

These tactics should suffice to bar unwelcome ideas from your door. It may happen—Heaven forbid—that after having completely stifled all urges to originality among your staff, you are confronted with a pressing need for a new idea. In that case...

Buy a creativity kit. A brainstorming package—what could be more thoroughly inspirational? Set up the charts, distribute the balloons, read out the script, start the egg-timer, and stand back! In three frenzied minutes, the inspired participants should pop up with 209 gleaming new ideas, one of which will be the answer to your problem! (If not, you must have the wrong problem)



**Text by Lydia Strong
Drawings by Al Horn**

BUSINESS



**New profit-sharing scheme
fosters teamwork,
raises efficiency**

Better Incentives for Sales-Service Staff

by Michael Mellor

BLICK Time Recorders Ltd. have put into operation a scheme which solves most of the problems of providing effective incentives for salesmen/maintenance engineers. Instead of being paid commission on individual sales, the men now receive an agreed proportion of the profits of their area.

Blick supply a wide range of time control equipment, including attendance time clocks, job costers, time stamps, watchman's clocks and master clock systems. Most of these installations are maintained by the company on an annual contract basis.

Under the old arrangement, this work was done by a sort of guerilla army of sales and service engineers. Each had his own territory and received a flat wage plus commission on all sales.

The arrangement worked — but there were a number of snags. As a representative's maintenance work built up, he found that he had less and less time for selling; consequently his commission earnings suffered. When this happened, he naturally

asked for an assistant, to whom he gave much of the routine maintenance work.

After a time, Blick found that the set-up was producing an increasing number of dead-end jobs. In some areas the company had four or five men—of which only one, or possibly two, did all the selling. The others usually formed a maintenance pool, and it was pure chance if an installation was serviced on every occasion by the same mechanic.

This division of responsibility for maintenance work was clearly a weakness of the system, for Blick had found that where one man was responsible for all equipment in an area, the standard of maintenance was high.

The new system, introduced after much thought and discussion with employees, overcomes such difficulties. Here is how it works.

First, the country has been split into four divisions. Each is controlled by a divisional manager, who has a financial interest in the success of the men under him. His main func-

tions are (1) to train and supervise staff, and (2) to handle the larger and more important sales.

For territorial and other reasons, the divisional staffs vary. The Southern divisional manager has seven sales and service representatives, each in charge of a separate territory. The Northern manager has eight, spread over six territories. Both the West Midland and London managers have three representatives.

In the two smaller divisions, the manager follows up virtually all sales enquiries. His representatives concentrate on providing an efficient maintenance service—and because of the terms of the bonus system they do not have to worry about losing commission on sales.

In one-man sales territories, the representative takes a share of the profits in the form of a monthly bonus. This is calculated as follows:

—The area is credited with the value of the annual maintenance contracts, and also the gross profit on all sales.

Continued on page 132

Deep-freeze Process Makes Grinding Easier

by Martin Bookham

FREEZE-GRINDING using liquid nitrogen has been pioneered over the past few years in the U.S., Germany and Britain. It has been known for some time that refrigeration of materials can help pulverization. But until recently only liquid oxygen and solidified carbon dioxide ('dry ice') have been used as coolants. The new technique has many advantages, and has opened up a wide range of new uses for the grinding process.

Why Deep-freeze

Many substances acquire different properties when cooled to very low temperatures. Lard becomes brittle, zinc snaps at the slightest pressure, the aroma in coffee is sealed, sponge rubber can be machined to close tolerances on a lathe. Consequently, deep-freezing can solve a number of grinding problems:

—Many materials with low melting points overheat during grinding. This can prevent continuous processing, and may cause jagged particles to be produced. Also, many plastics deteriorate when ground at normal temperatures, and dyes may be discoloured. Freeze grinding usually overcomes these problems.

—A number of substances have to be ground with great care at slow speeds. The freeze process often allows production to be speeded up many times over, thus lowering costs.

—Sometimes explosive materials have to be ground. Liquid nitrogen is 'inert' and an excellent fire extinguisher. It has allowed such dangerous operations as grinding frozen petrol to take place safely.

—Many food products are required in powdered form for processing, blending, etc. Freeze-grinding pre-

vents loss of flavour, vitamins and colouring.

Typical Applications

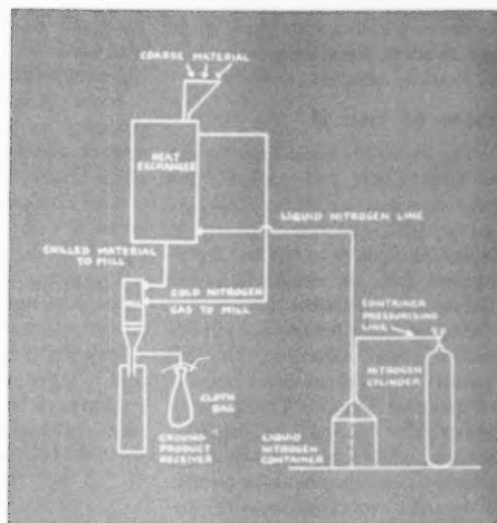
Freeze-grinding is not yet in widespread commercial use in this country, nor indeed anywhere else. But already a number of applications have been pioneered:

Lard has been frozen with liquid nitrogen and ground to a fine powder. Mixed immediately with flour, the particles remain isolated when unfrozen, providing a much smoother cake-mix powder, and one produced more simply than by traditional mixing methods.

Plastics additives are becoming popular for paints. The finer the ground plastics, the better the paint's adhesion. Only freeze-grinding has so far managed to powder certain plastics to the required quality.

Sorbo-rubber rollers, required for

Experimental set-up for freeze-grinding (below) has been demonstrated at Dohm Ltd., Surbiton. Diagram (right) and text explain how it works.



cigarette production, have to have absolute concentricity of internal and external diameters. They have been successfully frozen in liquid nitrogen and machined on a lathe.

In many cases freeze-grinding has produced altogether new materials (such as powdered rubber) which have never before been known, and for which there are consequently no known uses. Only further research and development can reveal the full usefulness of the technique.

Why Liquid Nitrogen?

Nitrogen has several advantages over traditional coolants:

►It is 'inert,' therefore will not cause a chemical explosion (like liquid oxygen) nor react with moisture (like CO_2) to produce acidity which may be detrimental to the substance being ground.

►Its boiling point is minus 195.8 deg.

C. This is lower even than liquid oxygen (minus 183 deg. C.) and very much lower than dry ice (minus 78.5 deg. C.). This means that substances become more brittle with nitrogen freezing, and stay colder longer than with other coolants.

►It is better than solid CO_2 because a liquid comes into closer contact than a solid with the material to be cooled.

►It is quite safe to handle, only needing an asbestos glove as a precaution against burns. Basically it needs no more care than boiling water. Dangerous splashes are rare, as droplets evaporate almost immediately at room temperature.

These advantages make liquid nitrogen a very practicable proposition. But there is one serious snag—it is an expensive product. Handling costs are high, and even when the nitrogen is stored in vacuum-insulated vessels

the minimum daily loss is 3 per cent. Further losses are incurred when filling or emptying the containers. Another expense factor is that production is only undertaken against known requirements.

The price varies considerably with the amount bought. It ranges from 15s. to 27s. 6d. per 1,000 cubic feet of gas (about 9 gallons of liquid).

In terms of production costs, it may be reckoned that between 1 and 10 pints of coolant will be needed for every pound of material processed. Added expense of this order means that freeze-grinding is only economic where the basic costs of the material being ground are already quite high. For instance, powdered lard may be an economic proposition where powdered potatoes are not.

On the other hand, savings are often possible because higher processing costs are offset by faster production. In the case of nylon, for

instance, grinding with liquid nitrogen is about eight times faster than at room temperature.

How to use it

The set-up for freeze-grinding can be quite simple, and examples have been demonstrated by the Linde Co. in the U.S., and more recently by British Oxygen Research and Development Ltd., in conjunction with Dohm Ltd., Surbiton.

An important feature of both systems is a heat exchanger. This unit consists of a well-insulated cylinder, with a series of vibrating cones inside. Material for freezing is hopper-fed at the top, while simultaneously liquid nitrogen is pumped in at the bottom. This soaks and deep-freezes the material that has reached the bottom of

the cones. Then, as it evaporates, the cold gas travels upwards, pre-cooling the material that is on its way down.

From the bottom of the heat exchanger, an adjustable screw-feed controls the flow of coarse material into a stainless steel hammer mill.

The nitrogen can be fed from either a bulk container or from a smaller Dewar vessel.

Freeze-machining is another possibility. In the case of the sorbo-rubber rollers already mentioned, the rubber was frozen by simple immersion in liquid nitrogen. It remained cold enough for precision machining for over two minutes, but it was found that liquid nitrogen could quite easily be run over the work while it was being machined. No special precautions were required. END

own computers. A central computing service will produce magnetic control tapes from information supplied by users in the form of punched paper tapes.

Self-control

ONE of the most elaborate electronic production control systems in the world is at I.B.M.'s Poughkeepsie (U.S.A.) factory. A giant 705 computer schedules materials and parts requirements for the 50 types of machine which are made there—including the 705 itself.

The system is now in its fourth year. The first was spent in planning it; the second in experimentally transferring a few operations from ordinary punched cards to 705 data-processing; the third in extending E.D.P. to the bulk of the factory's production.

The work includes inventory control, the preparation of manufacturing schedules and machine loading. The inventory file, kept on reels of magnetic tape, is up-dated daily (from stores receipts and issues) and monthly (from new orders). Controlling production for the 6,000-worker factory takes up about one-quarter of the 705's time on a two-shift basis.

Note for executives who wonder how computers will affect clerical staff: So far, the 200-employee production control department has been cut by only ten people. But this figure is expected soon to rise to about 40.

Automation News

Tape Control to Speed Heavy Steelwork

THE automatic programming of machine tools—popularly described as 'making parts straight off the drawing board'—is to enter the heavy engineering industries. Research co-operation between Ferranti Ltd. and the British Oxygen Co. has led to the development of a new type of flame cutting machine.

They describe it as 'computer-controlled'. This is a bit misleading. What actually happens is that after the profile of a steel plate has been designed and drawn in the usual way, dimensional and other information is fed into a special-purpose computer, which produces a magnetic tape. It is the tape—used in a separate control console—which directs the movements of the cutting head. Thus the control system is practically identical to that originally applied by Ferranti

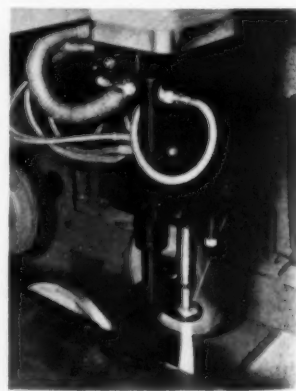
to milling machines (BUSINESS, March 1956, page 89).

Its main advantage is that it eliminates many of the conventional stages between drawing board and cutting machine. Not only is the work speeded up; there is also a big reduction in the chance of error.

An experimental model of this equipment—first of its kind in the world—was demonstrated recently. Production models are likely to be available in about two years' time.

The two companies say that their system will have far-reaching effects in all branches of heavy engineering, and particularly in atomic energy and chemical engineering. Initially, they are concentrating on shipyard applications.

Firms which use automatic flame cutting will not have to install their



Production models of this tape-controlled flame cutter will be available in about two years' time. It is expected to have many applications in heavy industry.

BUSINESS BOOKSHELF

THE AMERICAN BUSINESS SYSTEM, An Historical Perspective 1900-1955 by T. C. Cochran (Oxford University Press) 38s. net, 39s. post paid. Written by a Pennsylvania professor of history, this short book provides a factual account of the changes in scale and method of business organization and activity over the past half-century, and of the rise of the managerial class in large-scale industry, side-by-side with the continued growth of small-scale industry. The latter not only flourishes stronger than ever, particularly in the new service fields, but it has organized itself well for political self-protection. As with so many American heart-searching books on the ethics and mores of business, there is that sad, unrequited tinge of uneasiness that, for all the material success, something important is lacking. To what extent something is really lacking, and to what extent it merely seems so to the intellectual author peering in at business from outside is a debatable point.

BIG BUSINESS AND HUMAN VALUES by T. V. Houser (McGraw-Hill) 26s. 6d. net, 27s. 3d. post paid. The author is chairman of the board of Sears, Roebuck, the famous American mail order firm. There is no uneasy feeling about his book, in sharp contrast to the one reviewed immediately above. And yet he has, perforce, to use the same platitudinous ways of describing business ethical standards. Wherein the difference? Mr. Houser is careful to illustrate his general statements with particular references to the principles and practices of his firm. For example, the reader is not just left with the usual waffle about how a big firm in its pricing and profit policies balances the interests of customer, stockholder and employee. Mr. Houser gives a fairly detailed description of the sort of analysis which his company makes when it is deciding on whether or not, for example, to expand a store in a particular location.

MANAGERS, MAKING OR MARRING THEM, by J. D. Edwards (Macdonald and Evans) 17s. 6d. net, 18s. 3d. post paid. An American management consultant has written with a light touch a book giving anonymous case histories of executive personal problems, and his recommendations on how they should be solved. He also gives valuable, though sometimes rather too assertive, advice

on executive recruitment, development programmes and related topics.

A MANAGEMENT GUIDE TO ELECTRONIC COMPUTERS by W. D. Bell (McGraw-Hill) 46s. 6d. net, 48s. 3d. post paid. A comprehensive text by a leading American consultant. Although the opening chapters, describing what a computer is and what it is for, could be more simply written, the later chapters give valuable case histories on the use of computers by well-known companies for: inventory control; seat reservations control; actuarial operations; integrated accounting operations; production control; air traffic control; management reporting; production-shop scheduling; problems of installation.

INSTALLING ELECTRONIC DATA PROCESSING SYSTEMS, by R. G. Canning (Chapman and Hall) 48s. net, 49s. post paid. Several case studies have been rolled into one by the author, who is partner in an American consulting firm, to discuss the problems of installing a computer—fitting it into the organization, selecting and training personnel, programming, physical installation and the early phases of operation.

CITADEL, MARKET AND ALTAR by Spencer Heath (Science of Society Foundation) 43s. 6d. net, 45s. post paid. A rather wordy, imaginative, theoretical study of how the profit motive may be extended from free enterprise into the public services.

PROPAGANDA by Lindley Fraser (Oxford University Press) 7s. 6d. net,

8s. 3d. post paid. A brief but extensive survey of propaganda, from ancient times up to Nazi Germany and modern commercial propaganda, ending with a summary of conclusions as to the scope and limitations of use of propaganda.

BUSINESS BOOK-KEEPING by John Routley (Pitman) 9s. 6d. net, 10s. 3d., post paid. Fifth edition of a beginner's text.

ACCOUNTING FOR NON-ACCOUNTANTS, by John Myer (New York University Press) 36s. net, 37s. 6d. post paid. Another, and in many ways successful attempt to explain accountancy in simple terms. But the success comes less from simplicity of language than from the author's understanding of the business man's point of view. He has largely got away from the bookkeeper's view of accounts and the terminology which goes with it.

GUIDE TO COMPANY SECRETARIAL WORK, by G. K. Bucknall (Pitman) 10s. 6d. net, 11s. 3d. post paid. Twelfth edition of a textbook setting out the main responsibilities of a company secretary.

BRAINPOWER QUEST, edited by A. A. Freeman (The Macmillan Co., New York) 33s. net, 33s. 11d. post paid. The record of a convocation on the need for more first-class scientists and engineers, held in the autumn of 1956. Publishing delays have caused it to appear when the shortage in many fields of the American economy is already over.

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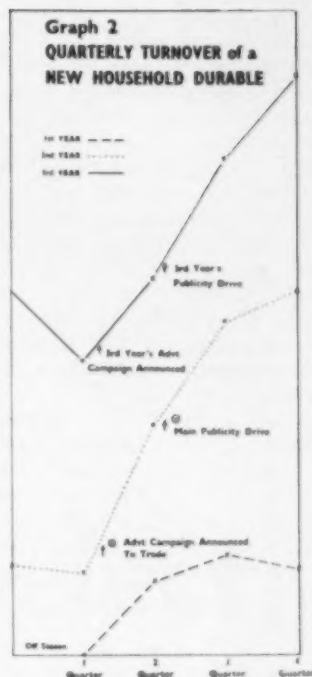
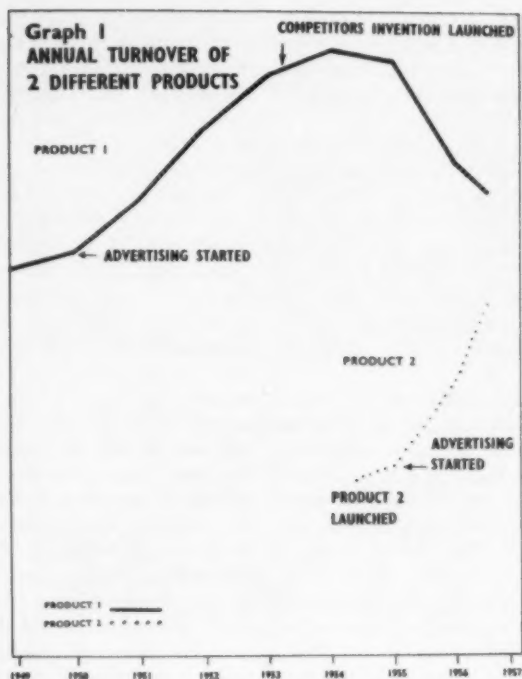
How Efficient is Your Advertising?

Only in the field of direct selling can fairly accurate measurements and forecasts be made. But even in the wider field of selling through wholesalers and retailers, some useful measurements can be made.

ADVERTISING has become a major tool in the hands of British business. Is it an efficient tool? Can its performance be measured? Still more important, can its performance be *forecast*?

These questions are put to the advertising practitioner many times a year. The businessman contemplating advertising rightly asks: "If I sink £10,000 — or £50,000 — or £100,000 — in advertising, what return can I expect? And how quickly?"

There is, of course, no simple answer, though it is safe to assume that the mass of advertising expenditure brings a worth-while return.



Vertical distances are proportional to sales

by **Edwin J. Ornstien, F.I.P.A.**

Managing Director, Max Ritson & Partners Ltd.

the mass. Many hundreds of companies go on advertising, year after year, and presumably are satisfied. In my firm, figures of sales are supplied regularly by a number of clients, and the overall picture is satisfactory. They give the general answer: "You have a good chance of a worth-while result".

But this is not good enough for the businessman who buys tools on stated performance, and the modern advertising practitioner wants to give a more accurate answer. Much of his work is devoted to reducing the element of chance—making advertising less of a speculation, more of an investment.

Where Results are Known. With some advertisers, results are known fairly accurately. These are chiefly the companies who deal direct with their ultimate consumers—firms with teams of salesmen who use advertising as a method of 'opening the door'; and mail-order houses. Table A gives figures of *new immediate business obtained* as a direct result of advertising by three such firms:

**TURNOVER PER £1,000
ADVERTISING EXPENSE**

Company A (Consumer Service)

1954	£123,055
1955	£108,239
1956	£147,927

Company B (Industrial Service)

1954	£10,400
1955	£18,020
1956	£10,829

Company C (Clothing)

1954	£7,318
1955	£7,532
1956	£9,043

All three cases were regarded as successful, yet the amount of advertising needed to support a given volume of business ranged from under one per cent to 13 per cent of turnover. These are quite common differences, due to the nature of the products or services advertised; the selling price; size of market; amount

of selling and distributing cost, apart from advertising; competition; and many other factors. The figures demonstrate how difficult it is to assess the possible effectiveness of an advertising campaign in advance.

However, in the field of direct selling, it is possible to measure many of the variables, and so to estimate fairly accurately the probable sales result of an advertising campaign. The immediate sales resulting from each advertisement in each journal or other medium can be measured. Here are the *immediate sales per £100 expense* for a company from the same advertisements in eight different journals:

Journal A	£42,013
" B	£19,865
" C	£15,346
" D	£13,168
" E	£9,110
" F	£6,825
" G	£2,083
" H	£1,714

And here, for two different companies, are the sales effects of changing the type of advertisement:

<i>Company D</i>	
Advt. D1	£4,845
" D2	£17,917
<i>Company E</i>	
Advt. E1	£544
" E2	£1,063

Similarly, questions of position in newspapers; seasons; dates of advertising; size of space and many other points of advertising technique can be evaluated.

Factors Beyond Control. But advertising does not stand alone. Results are strongly affected by general economic conditions; by changes in habit, fashion and taste; by Government action; by the weather. These and other outside factors have a greater

influence than any adjustments to the amount, or nature, of the advertising. The first lesson one learns from advertising results is: **One can hardly ever sail against prevailing winds. The cost of trying to do so is almost always uneconomic.**

The experience of *Company F*, selling a competitive household product, is illustrated in Graph 1. Advertising started in 1951 and produced a substantial increase in sales for three years. Then a new invention was put on the market by a competitor. Sales dropped; advertising was adjusted in various ways; sales still dropped.

Rather than flog this dying horse, the company decided to market an entirely new product, designed to take advantage of a new trend in household habits. After a period without advertising, a campaign was launched. The effect is shown in Graph 1.

In the first case, advertising could do little or nothing against the prevailing wind. In the second, it was able to take advantage of the wind, and greatly increase its benefits.

Company G sold a product of equal—perhaps slightly better—value than that of its many competitors. Selling direct to consumers, its advertising produced a turnover of £25,505 per £1,000 cost.

After several years' research, the company produced a new variation of the product, greatly and demonstrably superior to any of its competitors. With the same style and scale of advertising, turnover rose to £39,253 per £1,000 advertising cost.

The Wider Field. All these examples, with the exception of *Company F*, are in the field of direct selling. In the wider field of companies selling through wholesale and retail distributors, the problems of measuring and forecasting are still more difficult.

For the effects of the advertising they cannot be isolated from the other components of a marketing plan. If there is an increase in sales, how much is due to the advertising?—or the amount of co-operation from dealers?—or the display material or packaging?—or the company's travellers?

Further, how much is due to the word-of-mouth recommendations of consumers? This is a factor of greater importance than is often realized. Graph 2 illustrates the experience of a company who introduced an improved design of household durable. For the first year, the product was supported by a small amount of advertising. Then a full-scale sales promotion and advertising campaign was introduced to the trade at point X; the immediately increased sales represent retailers' stock orders in advance of advertising. The major campaign broke at point Y; graph shows the effect in repeat orders from trade stockists. In the following year, the amount of advertising was slightly less, but sales much more.

Probably this big increase in the following year was due to housewives showing the product to their friends. Perhaps also to increased trade confidence and consequent recommendation over the counter. Clearly the advertising 'triggered-off' the stream of 'recommendations.' But how much immediate turnover—how much dealer enthusiasm—how much recommendation—can a given amount of advertising produce?

These highly complex questions can perhaps never be fully answered. There must always be a large element of speculation in an advertising campaign. But by market research—by careful testing; close study of results; and by adopting the attitude of candid enquiry rather than self-interested advocacy, it is possible to reduce substantially the elements of chance.

END



A good advertising campaign for a good product should "trigger off" a stream of word-of-mouth recommendations which cause sales to rise even after advertising has been stabilized.

Your hunches can be costly. A thorough selection procedure is more accurate, more convenient and fairer to the candidates

How to Select Executives

by **T. M. Higham,**

Chief Employment Manager, Rowntree & Co., Ltd.

ONE of the more surprising things about human beings is that they are willing to spend considerable time and money investigating the form and antecedents of a horse they intend to back, while being less prepared to do this with equal thoroughness when selecting their future executives. A good selection method may be initially expensive, but is certainly less so than the final results of poor selection.

To be effective, a selection method must satisfy three criteria. First, it needs to be technically sound—so that assessments of people and jobs are as accurate as is humanly possible; second, the procedure must be

easy to administer and not too long; lastly, it must be fair, and appear so to those who take part.

If selection is hurried, people do not think they have had a fair chance to show their merits; if it is over-long, it becomes more of an endurance test, and may create resentment. But those considerations apart, selection stands or falls on its technical competence.

There are four stages in a systematic selection scheme. The first is to study the job for which a vacancy exists. This is not just a matter of saying "we want someone to fill old Joe's place when he retires", with the implication that what Joe does is well

enough known already and that the newcomer will be expected to carry on as before. It means finding out:

exactly what work is carried out; what responsibilities are involved; what contacts are made with other departments;

what training needs to be given, and how;

what difficulties occur in learning the job;

and what are the usual causes of failure in it;

what are the conditions of service and the physical, intellectual and other demands of the job;

finally, it is wise to discover what

prospects, if any, there are for future promotion.

Once this description of the job has been completed, it is possible to work out the main requirements. One good method is to sum up what you are looking for under the headings of the National Institute of Industrial Psychology's '7 point plan': physique; attainments (academic and experience); intelligence; special aptitudes; interests; disposition; special circumstances and background. The same headings can be used again later to summarize your information about the applicants.

The job description also forms the basis from which you draw up your advertisement for the vacancy; then it helps you to weed out the clearly unsuitable applicants, also to give the applicants some idea of what the job entails. This latter point is often overlooked: the more a person knows about what is required, the better he is able to assess his own chances of success in it, independent of the selection board; a detailed advertisement, or a short description of the job circulated to interested applicants often results in many unsuitable people withdrawing their applications.

Having assessed the job and advertised it, the second stage is to assess the applicants. This generally involves one or more interviews, and in some cases tests. Before discussing these, we will mention the other two stages.

The third stage is one of comparison: you match the applicants' qualifications against the job's requirements—using the same basis of comparison (e.g. the 7 point plan) for both.

The final stage is extremely important, though very difficult and often neglected. You must follow up the selection to see if it has been successful, and if not, why not. The information you gain thereby will help in future selection; and it provides a valuable check on the technical competence of the method.

How can one best set about assessing an applicant? It is a good plan to use an application form of biographical questionnaire which gives

the facts of a man's career in an easily understood manner (for example, along the lines of the Seven Point Plan). That is the first step. Later, the form can be used as a framework for the interview—a series of points on which to seek more information.

Opinion on the validity of tests is divided. If you have someone on your selection staff who knows how to interpret them properly, they can provide valuable information—but only, as a rule, about one aspect of the candidate, his mental ability. Tests need to be supplemented by other means of finding out such things as what a man does with his ability.

GROUP PROCEDURE

One of these "other means" is the group procedure—a method derived from the War Office and Civil Service selection boards. The main aim is to learn how an applicant behaves in a group.

A typical plan for selecting a management trainee would proceed along these lines:

A group of selected candidates, probably 6, perhaps as many as 8, and never less than 4, is invited to the group procedure, and accommodated at a local hotel. They assemble there the evening before the selection procedure begins, when they meet the manager of the department in which the vacancy exists and one of the selection staff. Dinner follows—a purely social occasion—after which the programme is outlined and any necessary study papers given out.

The next day the candidates proceed to the office, where they are given a specified time in which to study the problem already handed out. This problem may have some bearing on the vacancy in question, but often it is more general. A typical problem that suits almost all needs is the selection of the best site for a new factory, given particulars about three alternative sites. The type of particulars given can be changed to suit the needs of accountants, production staff, etc.

After studying the problem for about an hour the applicants are asked to discuss it between themselves

and to try and work out their solution. Their discussions are listened to and observed by the managers and selection staff concerned. The problem never has a clear-cut solution; there are always several.

The discussion often reveals candidates' abilities and shortcomings—you can see:

- how they put forward their views, defend or retract them;
- how they deal with opposition, mockery and indifference;
- how far they ignore red-herrings, or wander from the point;
- how well they are accepted by the others; and whether they try to dominate the group, or are content to play a minor role.

The weight put on these admittedly subjective judgments, depends on what sort of a person you are looking for.

After a short break for coffee the candidates are asked to lead a discussion in turn on a topic of their own choice—they are thus seen in an 'assigned leadership' as opposed to a 'leaderless' role. Such topics often reveal something about a man's interests and also about his ability to enliven a group and hold its attention.

The candidates take luncheon with younger members of the staff—people who will be their colleagues if they are selected. Meanwhile, the observers of the discussion will have assessed the candidates' performance *to date* and made a preliminary grading. It is only preliminary, as the group session is only a part of the whole procedure.

After luncheon, the candidates are interviewed. They have two interviews; one, individually, with one of the selection staff; and the other a board interview, with the managers who are concerned with the vacancy. Travel expenses are then reimbursed to the candidates, who are told, before they leave, when they can expect to hear the result.

Then the selection staff and managers meet to discuss each candidate: the selection staff are advisory and their role is to give as full a picture as possible of each candidate, bringing out the relations between his test results (if any) and his achievements.

and the extent to which his capacities and inclinations make him suitable for the job; thus the managers are aided in making a fair comparison between each candidate's qualifications and the job's demands.

The method described above is fairly typical of present-day group selection procedures. The features to note in it are these:

Firstly, the 'group' part of the procedure is only one part: the dinner and discussions must be seen in their proper context, as a means of finding out more about certain aspects of the candidates. The whole procedure will have involved at the outset a thorough job description and analysis; it makes use of questionnaires, interviews and possibly intelligence and other tests; it involves a careful comparison between each candidate and the job; and it will involve following up the selection later on.

Secondly, the group procedure is administratively convenient. Instead of seeing six candidates on separate days or at intervals over one or two days, they are seen both together and individually in the course of 24 hours. This has three advantages. In the first place, managers do not have to put aside an hour on one day and an hour on another to see a series of candidates: they see them all, in turn, in one afternoon, after watching them at work in the morning.

Putting aside a whole day can be difficult on occasions, but that is often preferable to a series of broken days. Secondly, it is easier to recall all the candidates when they have been seen on one day, than to remember them when they have come up singly on different days. Lastly, the waiting time for the candidates is reduced. When applicants are seen individually over a few days or weeks, a decision cannot usually be taken until the last man has been seen. By then the earlier applicants are getting restive, or may have got jobs elsewhere. With a group procedure, the men are seen at once, and can be told the result much more quickly. Group methods score highly on "administrative convenience".

FEBRUARY, 1958

Ten Steps in the Procedure

1. Study the real requirements of the vacant job.
2. Draw up a job specification and base your advertisement on it.
3. Send the applicants a more detailed questionnaire or job description, and let them sort themselves out.
4. Invite a chosen short list to a 'group procedure', and dine with them the night before.
5. Give the candidates a problem to study, and observe them when they later discuss it.
6. Then allow each candidate to introduce his own topic and lead a discussion on it.
7. Have each candidate interviewed individually by a personnel officer.
8. Put each candidate before an interview board of line managers.
9. Discuss and compare the candidates, contrasting them with the requirements of the job.
10. Follow up the selection procedure to observe the progress of selected candidates, and learn for next time.

A third point to note is that candidates find the group method a very fair one. Our selection staff take some trouble to find out what the candidates feel about the hoops they have been put through. Only in very rare cases have the candidates felt the procedure to be a waste of time, and the most common comment has been "It was quite hard going, but I feel I've had a fair crack of the whip".

But every selection procedure must be judged on its results: the fourth stage—follow-up—is vital. It

is not easy to do, because usually you are selecting for only one post, and follow-up of a single individual, while necessary, does not help to validate the method.

Such evidence as we have at Rowntrees, where we have used group selection methods to fill many staff posts since 1948, suggests that the technique is a useful one. It enables us to pick those who will best fit into our present organization. The methods are constantly reviewed, and followed up whenever possible. *END*

Four Ways to Boost Works Savings

by William Guthrie

AN employee who saves is likely (other things being equal) to be a greater asset to his firm than one who does not. For one thing, he will have fewer money worries.

Shortage of ready money reduces the benefits of holidays. Most workers now enjoy two weeks' holiday with pay; but 'pay' is often considerably less than average weekly earnings. Unless he has a small reserve, a man must 'waste' his holiday at home; when he returns to work he feels less like doing a good day's work than before.

Factory or office savings schemes do a great deal to establish the 'saving habit.' Experience shows that where a savings scheme is in operation an average of 37 per cent of the employees take part. Periodically members may 'raid' their accounts (for holidays, Christmas, etc.), but once they have established the sav-

ings habit, they generally leave a reserve—the average is 20 per cent of the original.

The savings habit is growing. In 1947 2½ million members of industrial groups saved £16½ million in a six-monthly period. By 1957 over 3½ million members were saving £44½ million in a six monthly period. One of the brakes on the rate of increase is the shortage of suitable savings helpers, willing to perform the modest amount of clerical work involved.

Savings clubs, formed for practically any specific purpose, like holidays, or Christmas shopping, often operate parallel with longer-term savings groups. Money deposited under any of these schemes can be withdrawn at any time. Most people know how these schemes work. Money collected by the club or group secretary on pay day is used to buy savings certificates, Premium savings bonds, or

deposited in the member's own account at a Post Office or Trustee savings bank.

But there are four special schemes which firms may find particularly helpful. Two are concerned with 'ordinary' saving. The other two enable the firm whose employees are not covered by pension schemes to give them some of the benefits associated with these schemes.

The firm guarantees that its savings group will be run under certain simple conditions laid down by the National Savings Committee. In return, no audited statement of accounts is required. The firm adopts any convenient form of supervision.

1. Cycle Method. Each member of the group states in advance the number of savings certificates he intends to purchase during the following 15-week or 30-week cycle. For each certificate 1s., or 6d., if it is a 30-week cycle, is contributed each week. This is in the form of collections or automatic deductions from pay. Each week the total is used to buy certificates, which are allotted to members by ballot but held in custody by the honorary secretary for distribution at the end of the cycle when payments are complete. The advantage is that members, according to their luck, receive certificates dated earlier than that of the end of



Works collections are not an essential part of every savings scheme. In many cases an agreed deduction is simply transferred from the employee's pay to his own bank account

the cycle. The system is favoured in many offices.

2. Direct Transfer. The employee tells his employer the amount he wishes to save each week. The employer sends the deductions to a savings or Trustee bank where they are credited to an account opened in the employee's name. Interest is added every month. The employee has his own bank book and his account is a secret between him and the bank. Additional deposits or withdrawals are made any time.

The scheme is found to work best where the labour force is reasonably stable. Where turnover is high, because of a large proportion of juveniles or young women, other systems, like stamped cards, exchanged for certificates, are preferable.

3. Retirement Savings Scheme. Many firms cannot afford, or do not want to be bothered with, a pension scheme, yet want to give their long-service staff a measure of security. This scheme helps them. It cannot operate where a pension scheme operates.

The employee agrees to save regularly a certain amount, which is interest for him in National savings certificates. The employer contributes up to ten per cent of the employee's salary, or £100 a year, whichever is the less. His contributions

are regarded as a trade expense, and not taxed.

When the employee retires he receives the total amount plus interest. The fund of employee and employer contributions is placed in a special account administered by trustees appointed by the firm. If an employee leaves before retiring age he will always be allowed to uplift his own contributions, and in some cases those of the employer. The committee has complete authority over the latter.

A sum of £50 a year, saved by an employee over ten years, would provide £575, plus the employer's contributions.

4. Assisted Savings Scheme. This is particularly useful where there is a group of workers who are difficult to cover by an existing pension scheme, or where no pension scheme exists at all. Some offices, for instance, have many women under 30 with ten or more years' service. If there is a general pension scheme they are sometimes excluded. Yet the management want to recognise long service or provide some gift on retirement (for marriage or other reasons).

The employee agrees to save a fixed amount each week. The employer contributes the same as the employee, or 5s. a week, whichever is the less. The contributions of both are placed in a special trust

fund. The employee can uplift his contributions whenever he likes, but the employer's share can not be paid until five years after the contribution was made, unless the employer agrees. For instance, if a worker is dismissed for misconduct he can claim only his own contributions.

Long-service Bonus

The commoner savings schemes are used for unusual purposes by some companies. John Bright and Brothers Ltd., cotton spinners, of Rochdale, use a saving scheme for rewarding long service.

In the past a cash bonus was paid every third year to long-service employees. Now an account is opened for each long-service employee at a trustee savings bank, and the bonuses are paid in every third year.

When the first accounts were opened last November both bank and firm wondered how long the money would stay there. Since then 420 accounts have been opened and only eight have been closed — through death or retirement. The company point out to employees that 50 years' service represents a bonus of £286, which if left in the bank over the years, collects interest that increases it to £397.

Sales Reward

E. R. Howard Ltd., Ipswich, wax polish manufacturers, give salesmen a premium savings bond gift token for every dozen cartons of polish sold. Previously savings stamps for 5s. were awarded for every £12 10s. of goods sold. To date almost £10,000 worth of stamps have been distributed.

END

MANAGEMENT AT WORK

IDEAS AND ACTIONS OF PROGRESSIVE FIRMS

They found out what employees really think

NEW method of surveying employee attitudes has been successfully tried out by the Crittall Manufacturing Co. Ltd. To satisfy the main requisite—complete anonymity for those taking part—groups of not less than 30 employees were asked to fill in individual questionnaires.

Each question could be answered by placing a pencil tick in one of six columns, representing 'emphatically yes,' 'yes,' 'on the whole yes,' 'not really,' 'no' and 'emphatically no.' Questions themselves were read out to the groups one by one, and were quite simple: 'Do you find your job interesting?' 'Are you interested in the company and its future?' etc. For even greater secrecy, completed papers were placed in ballot boxes, not handed in personally.

The company emphasize that great care was taken to explain the project to employees before it started, and results were discussed fully with participants at two special meetings.

Management action on the project's findings is being taken mainly indirectly, but a fortnightly bulletin and two new working committees have been started as a result of information revealed by the survey.

How to put office staff in the picture

WHEN C.A.S. (Industrial Developments) Ltd. recently completed a new 67,000 sq. ft. factory contract in Hampshire, they arranged a staff outing from their London offices to take a look at the finished job.

Secretaries, typists, clerks and office

boys all went along, in addition to those more directly connected with the work—architects, quantity surveyors, draughtsmen, etc. The party went by first-class railway, with only a sprinkling of senior executives to act as guides. No pressmen were invited.

The company make a regular practice of outings like this after the completion of a major contract. Says the managing director:

"It is very difficult to obtain a sense of achievement from a lot of bits of paper. If we were a factory turning out goods on the spot it would be different, they (the office workers) would see the end product every time they went out of the door. . . . We think they should have an opportunity of seeing the job for themselves."

In his opinion this policy also means better clerical work, as the real significance of the paperwork is made clear to office staff.

Customers help them get new business

NOTHING succeeds like success, and to sell an industrial product few weapons are as powerful as good user stories. So when the U.S. Permacel adhesive tape firm planned a new sales brochure recently, they got their advertising agents to send out two reporter-photographer teams on a five-week visit to existing customers.

Working in conjunction with salesmen in the areas covered, the teams uncovered all sorts of ingenious uses to which Permacel tapes were being put. Result was a booklet called 'Practical Packaging Ideas.' This was sent out as a promotional book-

let, and pulled better than any previous mailing.

Copies have also been distributed to all salesmen. Result: a host of new ideas for creative selling have been sparked off.

Safety conference for top executives

SAFETY is often thought of in terms of works posters and competitions. To emphasize that it is equally a top management responsibility, I.C.I. recently held a very full one-day conference on the subject for senior executives.

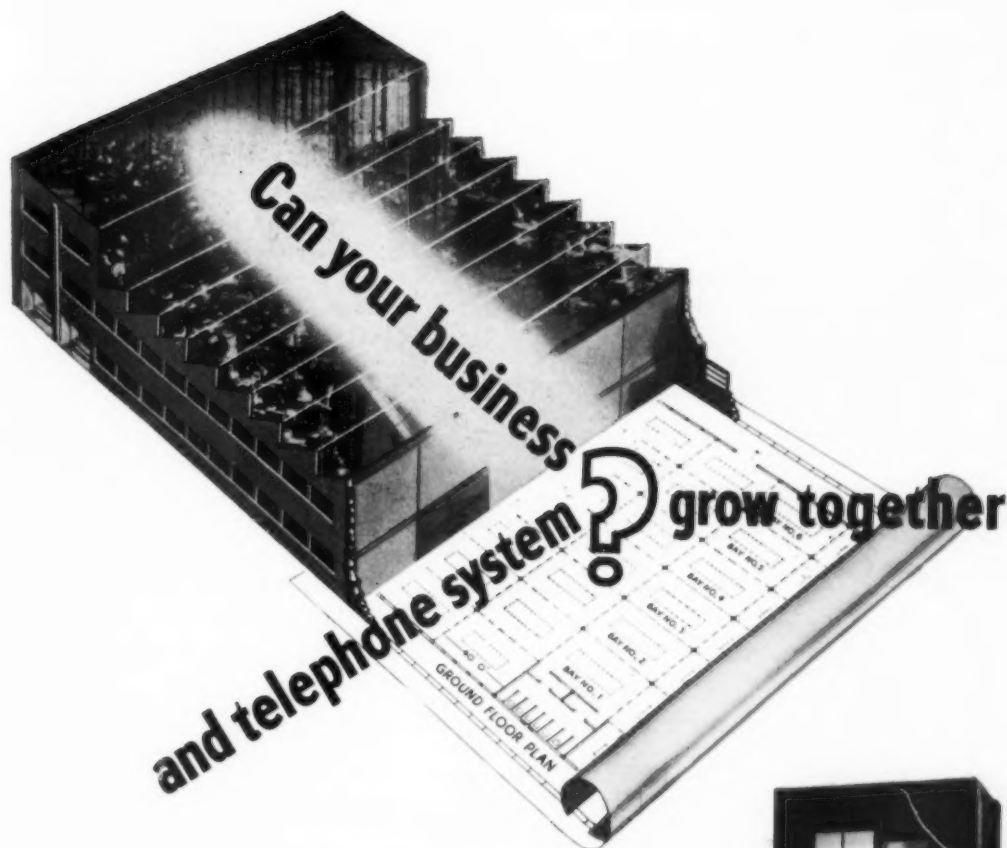
Subjects covered included: 'The role of Government in accident prevention' (paper by Sir George Barnett); 'What works managers think about safety'; 'What the law says'; 'Safety organization and its effect on works relations.'

These and some other papers have since been printed for internal circulation at I.C.I.

New ideas in selling and direct mail

● New premium savings stamp scheme is being started by Unitoken Ltd. Manufacturers joining the scheme give away a Unitoken stamp with each item of merchandise. Stamp value is adjustable, but is usually 2½ per cent of merchandise value. Face value of the stamps is paid in lump sums by manufacturers to the organizers, who place it in a trust fund. When the customer has collected £1 worth of stamps (from assorted merchandise) they are exchanged by Unitoken for a premium savings bond.

● In a recent promotion, the Quick-



Speed in inter-departmental communication is the keynote of efficiency. The installation of a Reliance Private Automatic Telephone System soon establishes that atmosphere of orderly activity so essential to smooth business organization. The more your business grows the more telephones you will need. So make sure your telephone system is flexible. For preference select the Reliance PX.5100 P.A.X. It can be equipped initially for a few extensions and can be extended quickly—easily—when and where required. Complete installations supplied on rental with efficient maintenance service, saving capital outlay. We shall be pleased to send you full details.



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52 gns.
(including the
basic accessories)

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Trade Enquiries to: KIDBROOKE PARK ROAD, LONDON, S.E.3.
(Electronics Division, Gas Purification & Chemical Co. Ltd.)

GS 82a

wrap Tubing Co. Ltd. mailed a 17in. coiled plastic snake, accompanied by the message: 'Great snakes! Look at your packing costs.' Next day follow-up letters arrived, referring to the snake, and enclosing Quick-wrap literature.

●To boost typewriter sales, Panda Office Equipment Co. are offering to give free postal tuition in typing to anyone who buys a portable from them.

●Some banks in the U.S. are adopting cut-throat tactics to get new depositors. One has given away more than 12,000 alarm clocks in three weeks to depositors opening an account with 50 dollars or more. Another is giving away coffee-makers and cameras to new savings accounts starting at 10 dollars or more.

●The Pyrene Co. Ltd. have a good variation on the 'company calendar' mailing. Instead of sending one every Christmas, when it has to compete with so many others for executives' attention, they mail a month-by-month card throughout the year. It has a back support so that it can stand on a desk, and a user story printed at the side does a gentle selling job for Pyrene's metal finishing division.



Ex-Liberty ship Italmare has been converted into a transatlantic car-ferry by the Fiat Co. of Italy. Capacity is 1,000 cars (see: How they solved a transport problem).

How they solved a transport problem

THE Italian Fiat company have just put into commission the second of three 'floating garages' to help overcome the problems of exporting cars to North America.

These converted Liberty ships are fitted with drive-on-drive-off arrangements, so that no crating, unpacking and reassembly of cars is needed. Each vessel holds about 1,000 cars;

on return journeys general cargo is carried.

The company believe that an expanding North American market makes this type of specialist ship economical to run. In any case, handling and packing costs are very considerably reduced. The idea may well recommend itself to British car manufacturers, who have all suffered from fluctuating ship availability and freight prices during the past 18 months.

New Standards Reviewed

Get painting

●Colour is increasingly used to spotlight factory danger-points such as low overhead pipelines, sudden changes in floor level and open guards on machinery. The trouble has been that the efforts of individual companies have not, in the past, been co-ordinated.

British Standard 2929, recently published, provides at long last a national guide on **Safety Colours for use in Industry**. It tells how red, orange-yellow and green should be used to warn of potential hazards and indicate safety equipment and safety routes.

As the standard system becomes widely adopted, it is hoped that

workers throughout the country will come to associate the various safety colours with particular types of hazard. If they move to another job they will not have to learn a completely new set of safety-colour rules.

The British standard is in line with a new international code.

On the nail

●Everyone uses hammers, and many firms may like to refer to British standard 876, **Hand Hammers**, which has recently been revised.

The 14 types of hammer for which quality and dimensions are specified range from the little 3½ oz. pin hammer to great sledgehammers.

Main purpose of the standard is

further to upgrade hammers from the safety-in-use angle. It includes a soundness test to find out any possible weaknesses in both head and handle.

Under the surface

●Non-destructive examination of materials by X-ray and gamma-ray techniques has become an accepted feature of industrial testing practice.

Hence the importance of a new British Standard (B.S. 2910), **Recommendations for Radiographic Examination of Fusion-Welded Butt Joints in Pipes**. The standard is based on radiographic techniques which are being successfully applied in industry.

Since exposure of any part of the human body to X- or gamma-rays can be highly injurious the standard includes guidance on protection.

**How a small firm raised output
and stabilized labour costs
through paying fewer
people more money**

Incentives-for-all Plan Cuts Unit Costs

by Stephen Rose

IT is cheaper to pay an efficient employee high wages than to employ two less efficient and lower-paid people. Yet, while few firms would care to dispute that statement, fewer still seem to act on it. Small firms, in particular, tend to leave work study and incentives alone; because management call employees by their Christian names, they feel they are getting the best out of everyone.

Just how wrong they are is shown by the White Swan Laundry at Bromley, Kent, an independent unit employing only 90 people. Like so many other firms of this size, it used to pay a flat rate with no bonus until about five years ago—when the management felt they could no longer tolerate its low productivity.

The Institute of British Launderers were consulted. Their Work Study department made a pilot survey. This revealed an average operator performance rating of only 35, compared to the 'norm' of 60, and an

average of something over 70 elsewhere in the Industry. The Institute recommended a work study project to lay down precise specifications and standard times for each production job, and a bonus incentive scheme based on these standard times.

The project was agreed, a full investigation was made, and comprehensive time values were set up, department by department. Once one section had been placed on incentive working, the management found no difficulty in 'selling' the idea to others. The extra money earned by incentive workers was enough to do that.

Finally, a permanent work study engineer was taken on to ensure that time values were kept up to date, and to keep a watchful eye on methods, work flow, etc.

Results soon justified the scheme. But the management were not satisfied. They felt it was unfair to withhold the possibility of bonus earnings

from indirect workers—maintenance staff, clerical workers, even managerial grades.

Two years ago, therefore, a comprehensive system of merit-rating was installed. *Now every White Swan employee including managerial grades, is on some kind of incentive scheme.*

How the schemes are worked

Production workers are assessed for bonus by a scheme that at first appears highly complicated, but which has worked smoothly for five years. Its complexity is due to the fact that a laundry worker processes so many different items in a number of ways, so that an hour's output depends on many variables, all of which have to be taken into account if a fair bonus is to be calculated.

Each operative is provided with an individual daily record sheet, which she fills in herself. These sheets are designed to cover all eventualities.

Figure 1 shows one designed for a



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	Will Trousers								186	
	Briefs								52	
	Pillow Slips	50	12	73				135	117	163
	Shorts								342	
	Pyjama Coats	12	15	4	20	9		60	350	210
	" Trousers	1						1	390	3
	Curtains (Large)	4	20					24	461	111
	" (Medium)	15	9	6				30	342	103
	" (Small)	30	20	11				61	262	160
OTHER WORK					FROM	TO	INITIAL	MINS	B/F	
									Total S.M.'s	750
									Unmeasured	
									Total Units	750
LOST TIME					FROM	TO	INITIAL	MINS	Lost Time	5
									Allowance	
									Debit	
Waiting					10.30	10.35	5	41	Total Credit	755
									Clock Time	540
									Credit	215
									Rating	84
									Bonus	7 1/2

FIG 1. Daily record sheet

press worker. It lists all the items that are liable to be pressed—trousers, divan covers, nightdresses, etc. (There are more items on the back.) It even distinguishes between large, medium and small sizes, as this will affect output.

Against each designation are spaces where the operator marks in the number of articles of that type processed in each lot or batch. Elsewhere on the sheet are spaces for recording 'Other Work', to cover any other activities that may have been necessary, and the exact time that was taken up by this other work, certified by the supervisor's initials.

The final space represents 'Lost Time'—so that any slow working due to hold-ups elsewhere, or to the non-availability of work, do not count against the operator. Again, exact times are noted and initialled.

Each day's time record sheets are processed by a calculating machine operator, whose major task this is. Using several registers of her machine for storage of interim balances, she

totals the batches of each item on the sheets, multiplies by the laid-down time value for that item and so produces the total number of 'standard' minutes worked by that operator on that type of garment.

For example, under 'pyjama coats' in figure 1, the total number pressed on the day in question would have been 60. The 'standard' time value for a pyjama coat has been laid down as 3.5 'standard' minutes. Therefore the operator has worked 60 x 3.5 or 210 'standard' minutes on pyjama coats.

When all items have been processed in this way, the machine shows the total standard minutes worked on all items together by that operator on that day (in this case 755). These are then compared with the actual number of minutes worked (540). The difference is the basis on which bonus is paid, since it represents in terms of time the extra work that has been put in. In this case, the operator has a surplus of 215 minutes, which, at the special bonus rate of 2s. an hour, pro-

duces a bonus payment of 7s. 2d.

Another calculation shows that the operator in question worked at a rating of 84 standard minutes that day. This means that in every 60 minutes' actual time she put in the equivalent of 24 minutes' extra work.

Work record sheets of all production workers are calculated daily, and operators are informed of their bonus earnings twice weekly, so that they can still put in an extra effort if the week happens to have started badly for them.

The system also allows management to keep track of individuals' work effort, through the simple rating figure which is thrown up.

Van drivers also count as production workers, and have a largely similar scheme of their own. Basically it is the same as that described in BUSINESS, November 1957 ('Incentives Scheme for Van Drivers'). Here again the basis is a standard minute value for every job—van

BUSINESS

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	JAN 1963	SEPT 1965	SEPT 1967
Production workers	61	44	46
Items per week	61,600	72,000	76,600
Average operator performance	45	74	81
Average hourly wage	1s.11d. (no bonus)	2s.3d. plus bonus 8d.	2s.5d. plus bonus 11d.

FIG 2 How incentives paid off

driver could be expected to undertake.

The bonus calculations may seem difficult, but in practice they present no problems to an efficient calculating machine operator. In effect they occupy one clerk from 9 a.m. till 4 p.m., five days a week. Against this 'running' cost must be offset a spectacular increase in productivity, brought about since the scheme was started. Figure 2 gives comparative figures which make this clear.

Merit-rating is applied to all indirect workers, and is administered by a management committee. This consists of the laundry manager, office manager, works engineer, work study engineer and an independent chairman from an associated company. The committee sits for the best part of a day every two months, and considers individual ratings.

Each member of the committee assesses individuals secretly, and without being able to refer back to previous assessments. Points are awarded on the basis of a 10-part questionnaire. It assesses:

- Appearance
- Time-keeping
- Conduct and co-operation
- Versatility and application
- Initiative and suggestions
- Technical ability, job knowledge
- Quality of work
- Quantity of work
- Care of equipment, avoidance of waste
- Leadership

Assessment is done by marking each employee under each heading within a given range of points, either 1-5, 1-10, or 1-15. *The range varies according to the grade being assessed.* For maintenance and clerical staff, for instance, timekeeping is considered more important than initiative and suggestions. So time-keeping has a maximum of 10 points, while initiative can only score 5. But in the case of the works engineer or the office manager the situation is reversed. For them initiative and leadership score a maximum of 15 each, and timekeeping (more or less taken for granted) only 5.

When all the headings have been assessed, points are totalled, and the committee compare notes. Generally members' assessments are fairly close to each other, and remain surprisingly consistent from one rating period to another. Where a wide difference of opinion is evident, committee members give their reasons for the assessment they have made, and a compromise is worked out by discussion.

The points total is then read off against a predetermined scale, which relates merit points and wage or salary, to translate the new merit rating into a weekly cash bonus.

Merit rating cards are kept for each person to whom the scheme applies, and after each committee meeting, the new assessment is entered. Then the manager has an interview with each employee to tell them of their new rating, and, where necessary,

explain the reasons for it. Experience has been that few employees resent an adverse rating, rather regarding it as a personal challenge. On the other hand, the manager feels that the rating interview provides an excellent basis for personnel relations, by translating personal effort into terms of hard cash.

Scheme for supervisors

Supervisors have a bonus scheme of their own, different from both piecework incentives and merit-rating. It is designed to encourage quality of output, though also rewarding quantity. This is how it works:

- A tally is kept of all items missing when laundered work is first assembled for packing. Missing items (known as 'shorts') are generally due to work having to be done again. Either a garment has been dropped, or it was badly processed the first time round. 'Shorts' are therefore a measure of quality.

Another tally is kept of items missing from the final sorting stage, when customers' parcels are actually being made up. These are less frequent but more serious.

Finally, a list is made of all the customer complaints received in a week which have been classed 'justifiable'.

- The total of these three figures—first and second 'shorts', and complaints—is then compared to the total number of pieces processed by the laundry that week, and expressed as a percentage. This percentage is read off against a graph which translates it into a 'quality performance' figure. Three-quarters of that becomes the basis of the supervisors' bonus.

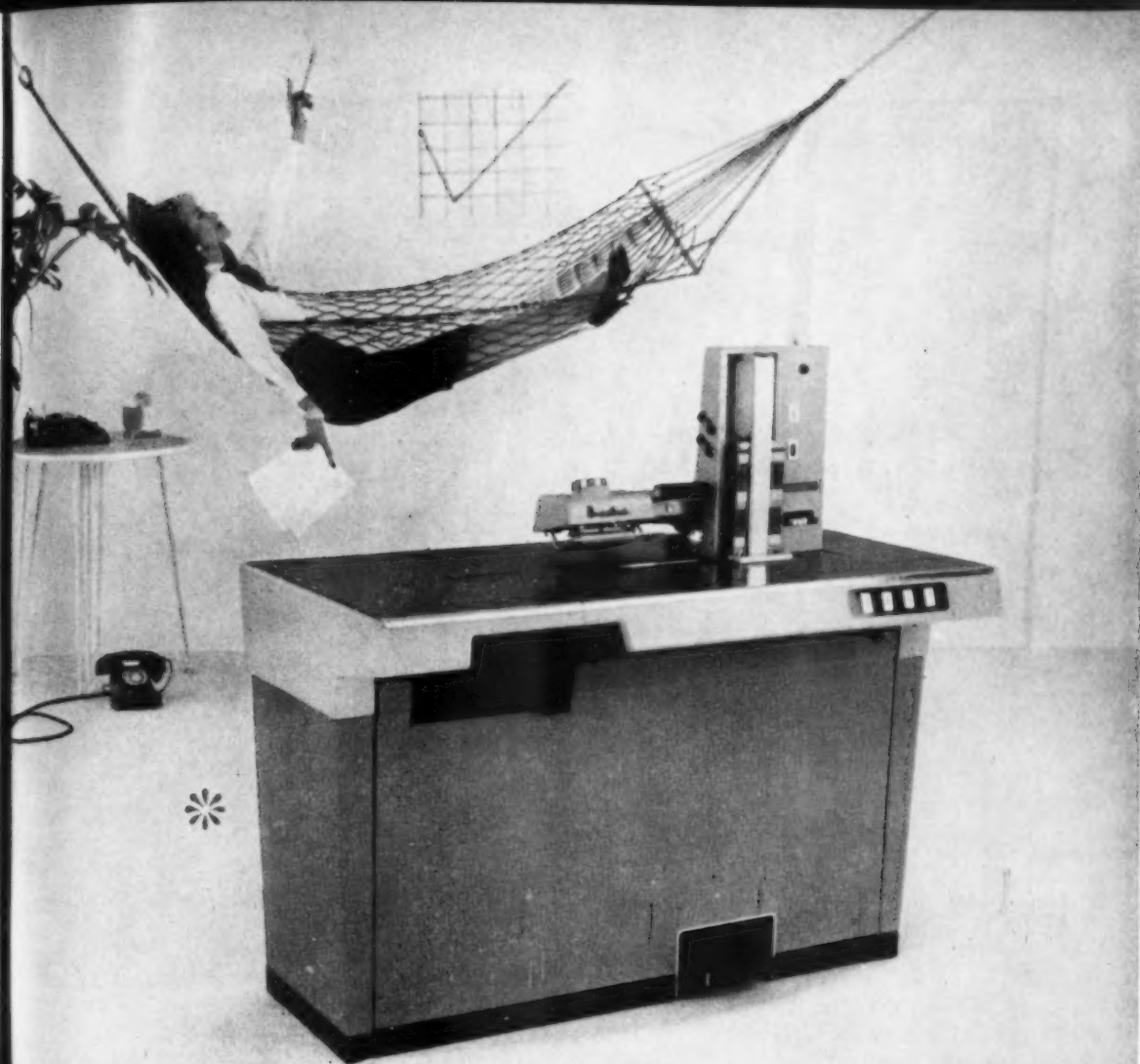
- To this rating figure is added a quarter of the whole laundry's performance figure for that week (an average of individual performance ratings expressed in standard minutes).

- The total is then read off against a table, to produce the bonus figure in cash.

Here is a sample calculation:

Continued on page 128

BUSINESS



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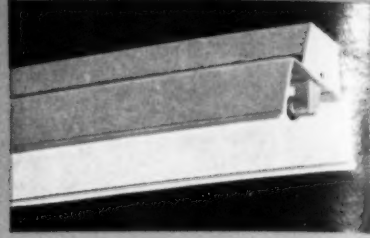
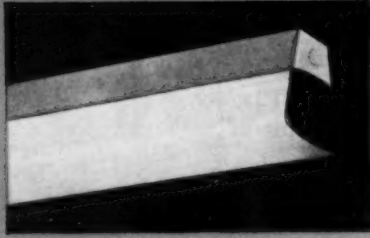
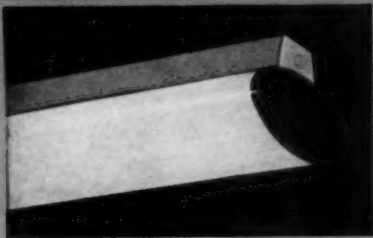


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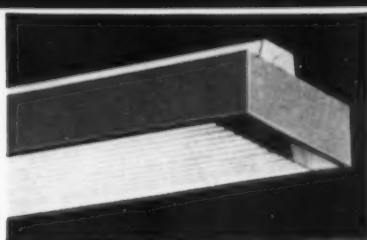
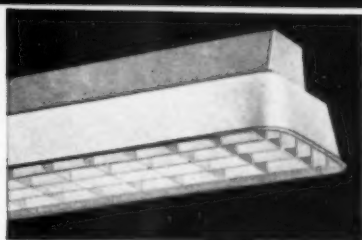
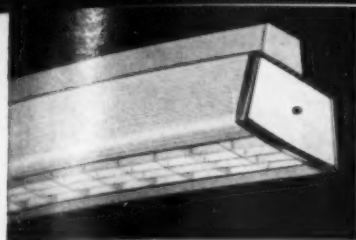


what's so new about fluorescent fittings



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The '101 Range' is an entirely new range of contemporary styled industrial, commercial and decorative fluorescent fittings. The successful result, in fact, of team work between G.E.C. fittings designers and illuminating engineers. Competitively priced—outstandingly modern in conception! **NEW** also is the introduction of basic channels for single or twin tubes, 1½ ft. to 8 ft. which, with specially designed attachments, form an interchangeable system of great versatility with particularly simple installation and maintenance. It is important that you learn all about this exceptional range—the '101 Range'—of G.E.C. fluorescent fittings, so write for fully descriptive catalogue No. F 4068.

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For the first time the industrial user can have vitreous enamelled closed end trough reflectors made from a single pressing, with well-rounded corners and without joints. They are therefore particularly easy to clean. New techniques enable them to be made lighter than previous types and therefore easier to handle and less susceptible to damage.

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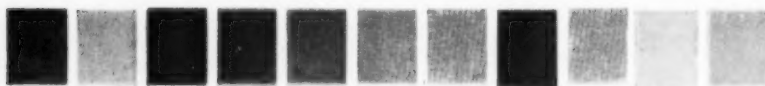
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Photocopied Paperwork Solved their Production Snags

by C. H. Gerrard

General Electric Co. Ltd., Coventry



**Components are now manufactured only
against orders at G.E.C.'s telephone works.**

**But a new control system ensures that
assembly is never held up for lack of parts**

PHOTO-COPYING has helped to solve a chronic production control problem for the General Electric Co. Ltd., at their Coventry telephone works. There they produce weekly between 30,000 and 40,000 relays; but their problem arose from the multiplicity of types produced—more than the total amount. Despite the maintenance of large stocks it was difficult and, in fact, sometimes

impossible to meet delivery dates.

The introduction of photo-copying has changed all this. Every section of the works concerned in relay manufacture now knows in good time what it has to make and the dead-line for delivery.

A relay is an electro-mechanical switching device and consists of three major parts—the coil, which is energized electrically to attract an

armature which in turn operates springsets (contacts).

The vast number of possible combinations can be judged from the fact that in one series of relays alone, there exist 3,000 different coils which can be associated with almost any of 2,300 springset combinations operated by any of 8 armatures.

Again, a coil in this series can require any one of about 500 types of

QTY 14	WEEKS 18	10G 550 AA1	50 SL SPEC	P51JJ / 7018 D
L H SPRINGSET CP 40001 S	M 3 W18 + W20		GROUP SL CTP 50000	QTY PER SL 1
R H SPRINGSET CP 40004 S	M 4 W24		BATCHED	REPEAT
BUFFER BLOCK P 14826	CX 20	1149	BATCH NO 04-159	QTY THIS BATCH 4
				ADJ TOT BATCHED 8

Printed (non-variable) data is supplemented by pencilled (variable) entries which reproduce well on the photocopies

wire finish, wound on one of 50 different bobbins. A springset combination can comprise one or two springsets, each of which might use between two and nine springs, of which there are more than 200 types.

Multiply the choice of assemblies by three to cover standard, tropical and Australian finishes, and the problems of controlling stocks and manufacture, so as to ensure quick deliveries, become evident.

The old procedure created artificial problems. All parts were ordered in optimum quantities when stocks fell below certain minimum levels. These quantities took into consideration previous usage, estimated future use, bulk, availability of material, etc., and were often considerably in excess of immediate requirements. An essential supplement to the procedure was a system of chasing 'slow' parts.

A more effective system for production control had to be devised because the shop was fully loaded, stocks of parts were heavy, output measured in total relays was in excess of the number needed at subsequent production stages, yet these production stages were frequently held up for the kind of relays they wanted.

The first and major decision was that coils would be wound and springsets assembled only as required. This posed the problem of discovering as rapidly as possible which coils and which springsets were required for each order, and of making sure they were available for the assembly of the complete relay, on time.

The answer to the first part of the problem was found in the code number used to identify each relay. The second part of the problem was greatly simplified by the works practice of

allocating to each production week a number from 1 to 48. (The four missing weeks are accounted for by holidays at summer, Easter and Christmas).

The code for most relays takes the form: ABC/2345/YZ. This can be broken down as:

A—Relay series code letter.

AB—A bobbin in the series.

ABC—A coil wound on a bobbin in the series.

2345—A number which identifies a combination of springsets which will perform specific functions.

Y—Armature type.

Z—Armature adjustment instruction.

A typical code would be P51B/6351/A2. Of this code, P51B and A2 are completely descriptive, but 6351 is not. An immediate requirement was an extension of this information into a form whereby it became fully informative. Even a punched card system had been considered, but an obstacle was always the accurate passing of information to a central processing section.

The new solution was to provide the production control section with its own processing facilities, by means of up-to-date photo-copying equipment. Around this, a new procedure was evolved.

The relay data sheet reproduced here was drawn up. It had to be capable of being reproduced again and again. Moreover, it had to be possible to make copies from the copies.

A relay data sheet was prepared for each springset combination to serve as a photo-copying master, and in order to obtain a suitable printing-through speed (i.e. from master to

copy), transparent foil was used for the masters. Copies were also made on foil in order to give the necessary printing-through speed when producing prints on paper.

On receipt of an order for relays a copy is taken of the foil master relating to the springset combination and a soft pencil is used to complete the variable information, such as coil and armature codes, sales order number, quantity required, delivery week, etc.

A paper print is then taken of the completed foil and the functions of the two documents become:

Foil—to facilitate issue of parts from stores and the provision of assembly data.

Print—to facilitate the ordering of parts and their placing in stores by such a time as will permit their issue to the sections for assembly.

All the foils referring to a particular week are placed in a file until they are required to start assembly. Then the prints are sorted in various ways to throw up information for ordering the various types of coil required.

A coil manufacturing order is prepared on a translucent paper master and copies are taken for issuing to the sections concerned.

The coil manufacturing order is an order to the coil winding section to wind coils, but owing to the number of variables affecting each coil, such as type of wire, number of turns, etc. it is necessary to provide the section supervisor with a means of passing instructions to the operators.

So for each type of coil on the manufacturing order, the supervisor is also issued with an engineering print of the coil which gives full winding information.

Three colours of base paper



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Manufacturing instructions, as well as information required for orders, is reproduced by photocopying. Processing takes about a minute

used to differentiate between standard, tropical and Australian specifications, and these prints are taken from foil masters which again were prepared from linen masters already held by the engineering department.

They are referred to as I.T.M.s, (instructions to make) and are printed in proportion to the quantities appearing on the manufacturing order. I.T.M.s also carry an operation number and a winding unit value and thus facilitate the booking of the operators' time against the operation number and the calculation of piece-work bonus.

One print of the coil manufacturing order is used to originate an order for the bobbins. It will be recalled that the code P50A denotes a coil and P50 describes the bobbin on which the coil is wound. It is thus a simple matter to total, for example, the P50 coils on the order to obtain the total number of P50 bobbins required. The same is done for bobbins of other types.

Bobbins themselves consist of between four and six parts from a total of 35 parts. A simple summarizing technique arrives rapidly at the number of parts required from stores. A key plate was cut for each

part number. Used in conjunction with a standard form called a bobbin list, a plate reveals through apertures only those totals appertaining to the part in question.

The form itself gives details of the parts used for each bobbin, where they are to be made, where despatched to, etc., and is pre-printed on transparent paper. Copies with quantities entered in pencil are printed by the photo-copying equipment and distributed

- (a) to stores, to indicate the parts to be issued;
- (b) to the bobbin assembly section, as an order to make;
- (c) to a records section, as a basis for a progress check.

The white prints, after being used to originate coil and bobbin ordering, are re-sorted in springset numerical sequence. Similar springsets are totalled and the full requirements listed on a transparent order form as in the case of coil ordering. Prints are taken off and issued to the relevant sections. Corresponding I.T.M.s are printed for issuing to the springset assembly section.

In principle, springset I.T.M.s are

similar to coil I.T.M.s but differ considerably in detail. All the information necessary for assembling and coding a springset is included on the I.T.M.

In addition, a perforated appendage, printed at the same time, is designed to be separated into three labels, each of which can be fixed to the outside of a container for springsets. On these labels is entered a record of the operators engaged on various stages of assembly.

A final re-sorting, this time into armature types, gives the final set of information which can be extracted from the prints, and an armature list is prepared. The prints are held in file for a short time against possible queries.

So far, then, with a minimum of effort and duplication, and thus with a minimum chance of error, steps have been taken to ensure that the correct parts are ordered and delivered to stores in time for assembly of the relay to commence.

The breakdown procedure is continued into the lower orders of manufacture and covers the ordering of subsidiary parts and materials. Devices such as rotary index files and electric adding machines were introduced to the procedure to simplify the work of the clerks. But basically the principle of ordering parts in optimum quantities remained unchanged. The information used to institute orders was, however, rather more accurate than before.

Let us now turn to the foil, which during this time has been resting in file and continues to do so until a short time before coils and springsets have to be issued from stores for assembly.

It will be seen that provision has been made on the foil (page 102) for entries to be made relating to batch quantities. This arises from the physical characteristics of relays. An optimum batch for handling consists of 40 relays. A means of controlling the release of relays in batches of 40 had therefore to be devised and the foil is used for this, providing further

Continued on page 130

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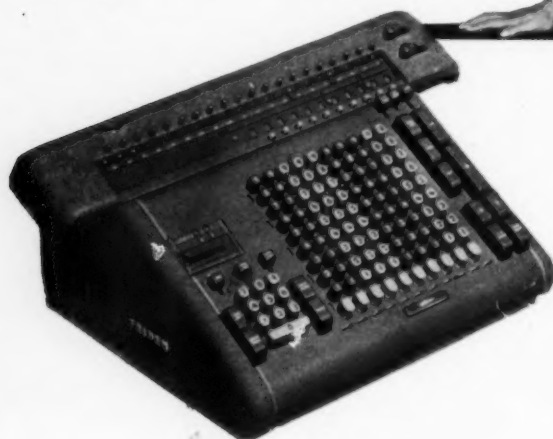
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Their bottling and packing line only employs 14 part-time workers—but a £750 reorganization project has already paid for itself

Consultants Almost Doubled this Small Firm's Output

by Alan Collard

MANAGEMENT consultants frighten the small firm. Their fees are too often thought of in terms of four figures, while their reported activities at other firms seem remote from harassing day-to-day problems.

But Radiol Chemicals Ltd., of Putney, provide an example of just how practical both the work and the benefits of consultants can be. The experience of this 40-employee firm, whose bottling and packing line employs only 14 married women part-time, drives home the point that it is often the small firm that stands to gain most from outside help. The consultancy project here resulted in productivity rising 84 per cent; capital expenditure on it was recouped by extra profits within a few months.

Radiol manufacture a range of medical and veterinary preparations for the relief of various rheumatic conditions. By 1957, sales expansion

was making the prompt despatch of orders very difficult. Output had to be increased, but the local authorities would not allow use of part of the premises under the Town and Country Planning Act, and only limited capital was available.

Major production hold-up was on the bottling and packing line, so the firm asked the advice of the Institute of Packaging. On their recommendation consultants were called in. This was their procedure:

1—They visited Radiol for one day, to assess the situation and make a preliminary report. This visit was free of charge.

2—The report was encouraging, so they followed up with a technical survey lasting several days. Operations were analysed using work study techniques. New motion patterns for operators and new ideas for production methods were thought up.

The consultants were then able to

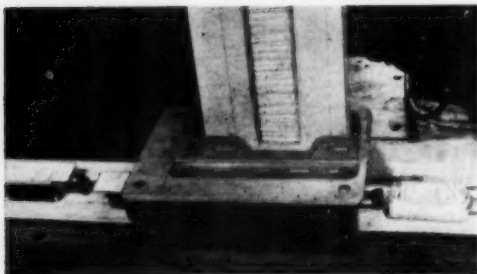
make precise recommendations for reorganization, and to give a reasonably accurate estimate of the total capital outlay required (£740). This estimate included their own fees. But the charge for the three-day survey itself was only £30, and that is the only sum to which the firm were committed at this stage.

3—After receiving the go-ahead from Radiol, the consultants spent three weeks designing and ordering new equipment and packaging materials, as recommended in the report. Meanwhile, they trained an employee of the company in work study methods, supplemented by attendance at evening classes.

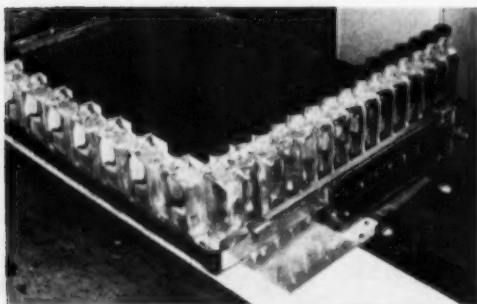
4—Radiol now set about reorganizing themselves on the lines laid down in the report. They moved machinery, shortened a central conveyor line, installed extra equipment, etc. This lasted about a month.

5—A consultant then returned on

Bright ideas that cut their costs



LEAFLET DISPENSER places ready-folded pamphlets on bottles as they pass along conveyor. This home-made gadget saves packing time and labour.



BOTTLE GUIDE feeds bottles to the correct position on the conveyor. It has evened out the work flow, and saves operator movements.

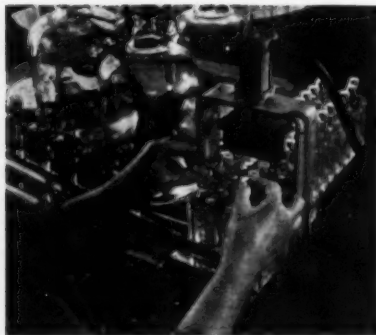
a part-time basis for four weeks. His main task was training operators to work to new job specifications that had been designed for them, and to supervise the implementation of new methods for the line as a whole.

The investigation confirmed a fact that the management already appreciated—namely that output on the bottling line could be doubled by adding two extra filler heads to the main bottle-filling machine. Previously this solution had always been rejected because existing space and the existing work force could not

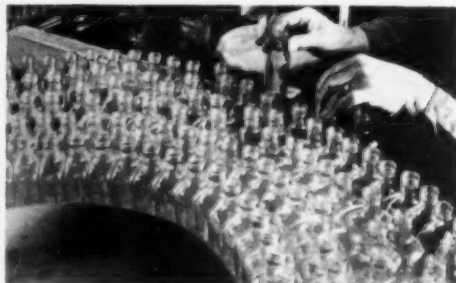
have coped with the increased output further down the line.

The consultants, however, had other ideas. Their view was that smoother work flow and better working methods by the same number of operators would allow nearly twice the previous production to be handled. Events proved them right. But no one dramatic change was responsible. Here are some of the small detail points whose sum total accounted for much of the success:

Improved work stations. Originally, filled bottles were taken off a



AIR PRESS speeds up corking. Guide-rails allow both hands to be used simultaneously. Before, single bottles were corked by hand.

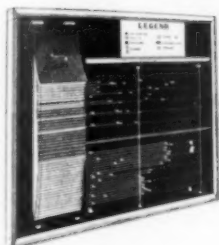


ROTARY BOTTLE STAND places empties within easy reach of the operator who fills them. Before, bottles were just dumped on a table in crates.

central conveyor (around which the whole line is built), fed to a labelling machine, and then replaced on the conveyor. By re-siting the machinery over the moving band, the distance that bottles had to be moved was considerably reduced. This also meant more floor space was gained.

A simple chute was designed to take filled bottles from the filler to the points where they are corked and capped. Previously they had accumulated on a work table until moved by hand. The chute created more space, and cut out a manual operation.

Revised motion patterns. Bottle filling, corking and capping operations were speeded up by teaching operators to feed bottles to their



URGENT



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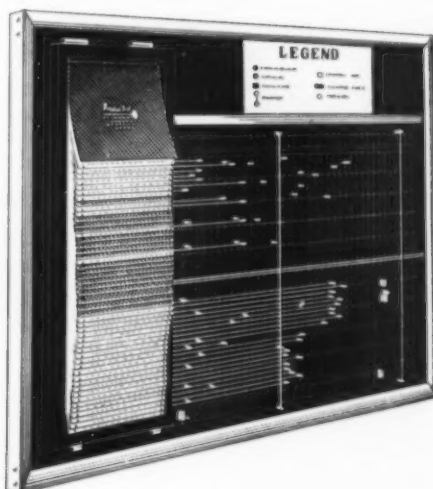
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machines with both hands. Better methods were similarly applied at other points along the line. Job specifications were drawn up for each operation, and Radiol have assumed responsibility for follow-up training. Flexibility is ensured by seeing that each operator is able to do all the jobs on the line.

Operations eliminated. The consultants found that inspection was an unnecessarily cumbersome procedure, with bottles having to cross the conveyor from the labelling machine to the inspection point, and back again for packing.

The solution was to combine inspection with another operation — cap-fitting. This was a logical move, since the operator who fits the caps has to look at the bottles anyway. Also this means that the minimum of work is done on a faulty bottle.

Another crossing of the conveyor (from capping machine to the labeller) was eliminated by re-siting the labelling machine (see above).

Also eliminated was a packing

operation—giving necks of bottles a special protective wrapping to prevent breakage in transit. Investigation revealed that breakage of unwrapped bottles would be too small to warrant the precautions taken.

Simple mechanical aids were devised to speed operations:

► **ROTATING BOTTLE STAND.** Empty bottles for filling were previously loaded, four crates at a time, on to a table next to the filling machine. The operator had to stop work periodically to take them out of the crates and place them within easy reach. Now they are loaded directly on to a special stand which rotates on its base and provides easy access to the bottles it holds. Cost: £26.

► **GUIDE RAILS** were designed to bring bottles directly to each point where work is performed. They are particularly useful for channelling bottles into correct position on the conveyor. Made of chromium-plated metal strips, they were constructed by a model-maker and cost only £40.

► **HAND OPERATIONS** in corking bottles have been cut down by the construction of a small pneumatic press. All the operator now has to do is to place corks in position on the lips of each bottle, leaving them to be driven home by the press. The cost of this (together with an air compressor which can be used for other operations too) was about £60.

► **LEAFLET DISPENSER** of very simple design was constructed at a cost of £7. It places a pre-folded pamphlet neatly in position for packing with every bottle. Formerly, the packer had to pick up, fold and position each pamphlet before forming a carton and putting a bottle in it.

► **TAPE-SHOOTER** has been purchased for £42. It dispenses and cuts moistened, gummed tape for making up packing cases. A calibration device allows different lengths to be dispensed, according to the cases being made. The cost was relatively high, but it is saving packers much valu-

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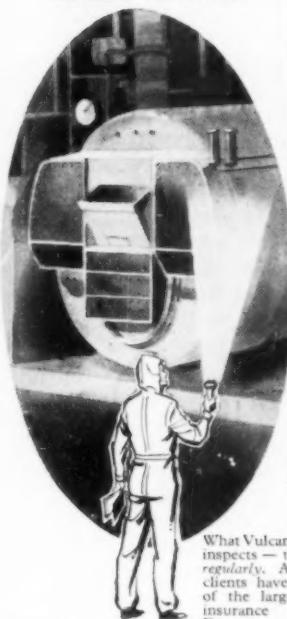
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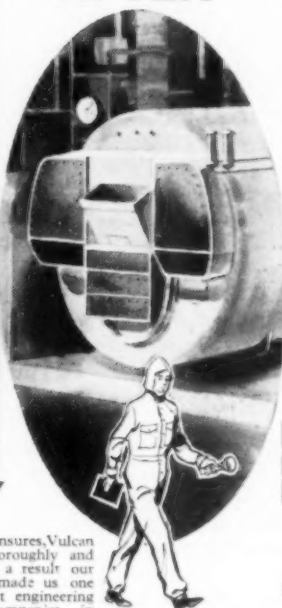
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able time. Previously they had to battle with loose rolls of adhesive tape.

Material modifications have accounted for some other increases in productivity:

- closer tolerance on corks stops them dropping into some bottles;
- smaller cap washers eliminate cap breakage during mechanical tightening;
- dry storage and the use of weights prevents labels curling up at the edges, which used to slow down production;
- redesigned cartons have pre-broken spines and cutaway flaps, so that they can be broken open, formed and closed in a third of the previous time;
- smaller corrugated sheets are now used to line packing cases, as some oversized pieces previously had to be bent at the edges to fit in;
- one-piece plastic conveyor belt has replaced the original webbing one. Grease had made the webbing slip-

pery, and cartons were being damaged by its metal clip joints.

A bonus scheme which was originally recommended has not been installed. The management feel that this would be hard to administer in view of their predominantly part-time labour force. In any case, 12½ per cent of the firm's profits are shared out among employees every year. They will, therefore, automatically derive a group benefit from better working and methods.

What was done, however, was to provide an all-round wage increase when reorganization took place, to encourage a smooth switchover to the new system.

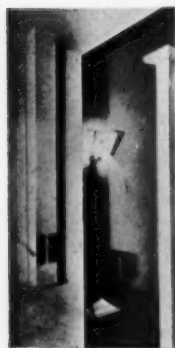
The consultants rounded off their work by planning a five-year expansion programme, designed to take advantage of the extra productive capacity their project provided. It details a limited capital expenditure programme, and also predicts that work study at other points in the set-up could bring about another 30 per cent rise in productivity.

The all-in cost of both the investigation and the reorganization has been £746, which compares creditably with the estimate of £740. The total consultancy fee was £400, covering all phases of the project, but excluding design work, and the remainder represents equipment costs.

Offset against this reasonable outlay is the great increase in profitability brought about by new methods. With bottle output up by 84 per cent (production is now at the rate of almost 21 a minute, compared with 11 before), the business as a whole is gaining enormous cash benefits. These more than covered the cost of the project within a few months.

Furthermore, if sales expansion takes place at the estimated rate of 20 per cent per annum, the profitability of the new set-up will increase even faster. After five years, sales will have expanded 100 per cent. But fuller exploitation of the existing production line will have boosted profitability of the operations almost 400 per cent.

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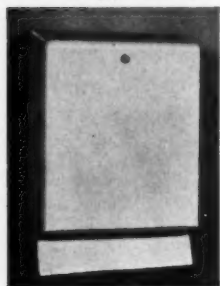
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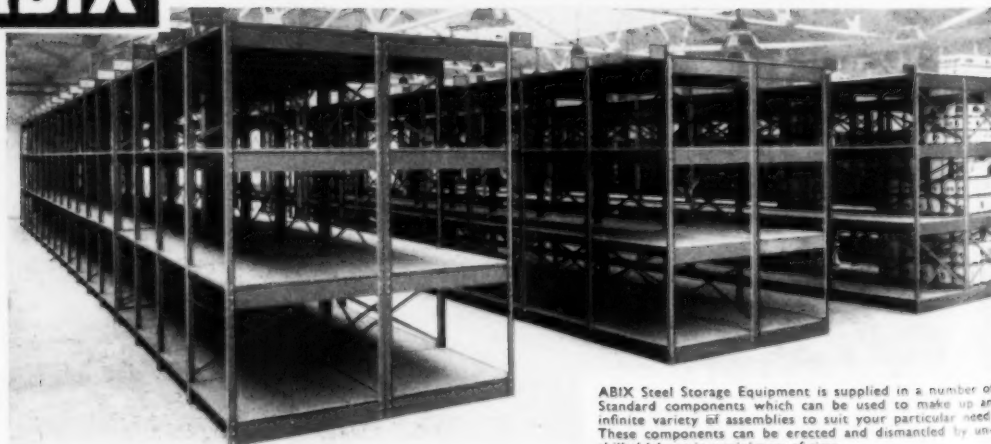
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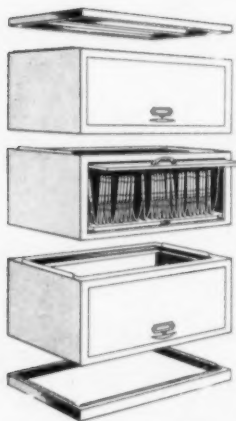
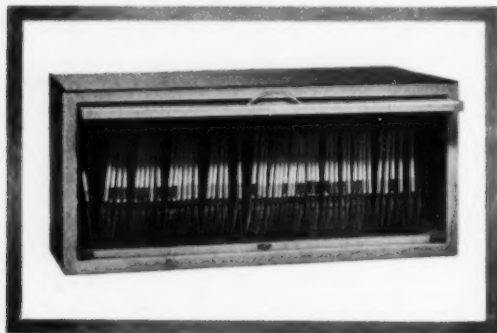
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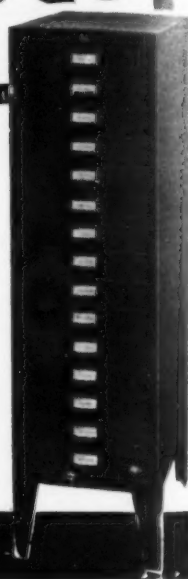
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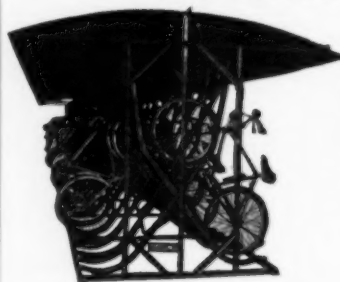
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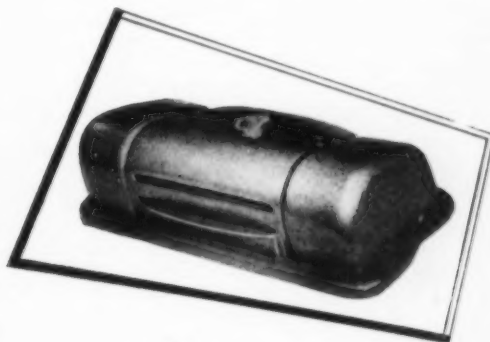
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- ★ There's nothing the "Record" can't copy—single or double sides, typing, printing, handwriting, drawing in pen (ordinary or ball-point) and pencil in any colour!
- ★ One small compact unit does the whole job—there's no contact with chemicals or spirit for the operator!

Here are just a few of its many uses . . .

- ★ Incoming mail ★ Invoices ★ Statistics ★ Orders
- ★ Statements ★ Parts Lists ★ Diagrams and Plans
- ★ Legal Documents ★ Memos ★ Agreements.

The "Record" is just one photo-copier from our range, the largest in the world—with prices from £46 upwards. Write or telephone now for details or a demonstration—we've branches all over the country!



COPYCAT

LIMITED, DEPT. B21, 46 VICTORIA ST., LONDON S.W.1. ABBEY 7631-8

"What a Beauty"



Models for either manual or electrical operation, sterling or decimal.

MODELS FROM
£29-10

The Genius for Figures

The ever-increasing popularity of the Adwel proves that it adds pleasure and profit to everyone's life.

ADWEL Adding/Listing machines are used by such well-known organisations as CURRY'S LIMITED and GREAT UNIVERSAL STORES. Where greater efficiency is required, there you will find the ADWEL.

OBTAINABLE FROM OFFICE EQUIPMENT ESTABLISHMENTS EVERYWHERE

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Administrative Offices: 20 Pall Mall, London, S.W.1. Tel: TRAfalgar 2203/4

Service Depot (until further notice): 265 Strand, W.C.2. Tel: HOLborn 7206

BUSINESS Equipment Survey

NEW AIDS TO GREATER OUTPUT AND LOWER COSTS

FOR YOUR OFFICE

Dry Duplicator

SMALL and modestly priced, the *Merlin Cub* duplicator is designed for applications where 50 copies or less are required. It uses no ink or



For up to 50 copies

spirit, and the entire equipment is enclosed in a flat wooden box.

The duplicator, which is of the flat-bed type, works on a principle similar to that of a spirit machine, except that the process is dry. Paper masters are typed, written or drawn with a special carbon placed, coated side up, beneath the sheet. The master is then clipped to the detachable lid of the box, which is used as a base-plate.

Copies are made on sensitized paper, which is pressed against the master by means of a squeegee. Interaction between a chemical contained in the paper and the carbonized image on the master produce a good facsimile.

Up to 50 copies may be taken off one master. Masters may be up to 8in. by 6½in. in size. The sensitized paper may safely be exposed to ordinary light and has a long shelf-life.

The containing box measures 10in. by 8in. by 2½in.

*Ellams Duplicator Co. Ltd.,
5 Dean Street, London W.1*

For Offset Plates

NEW developments in offset-litho plate-making will, it is hoped, enable users of relatively small machines to make their own plates.

The *Grant Magenta Screen Photoprojector*—a new, smaller and easier-to-use camera—should help to achieve this aim.

The camera is vertically mounted in a movable cabinet measuring 49in. by 33in. by 27in. Accommodating a halftone contact screen up to 17in. by 14in., it can produce halftone or continuous tone negatives and enlarged or reduced copies of originals for general photocopying.

Designed for easy, foolproof operation, the camera can do most of the work usually covered by a large process model, the manufacturers say. Among its features is an automatic vacuum lid which ensures perfect contact between the photographic material and halftone screen.

Simplification of the entire plate-making process is achieved by using *Lithofoil* pre-sensitized plates. These have a shelf life of 18 months and need none of the complicated processing procedure and equipment previously required. The *Grant Mervac* printer, a unit similar in size to the *Photoprojector*, provides an economical means of printing.

Using the equipment mentioned above in conjunction with the usual darkroom equipment, an offset litho plate can be completed in about 20

minutes. Cost compares very favourably with older methods, it is claimed.

*Grant Production Co. Ltd.,
4 Rathbone Place, London W.1*

Faster Calculations

A NEW high-speed printing calculator, the *Divisumma 24*, has one register and a 'memory'. All four arithmetical operations can be done



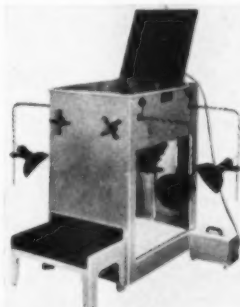
One register and a memory

on it with equal ease; multiplication and division are fully automatic.

The 'memory' helps to speed up the work, since in chain calculations the constant factor can be stored and used repeatedly. For instance, products can be re-entered automatically during continuous multiplication; or after doing division, the quotient may automatically be re-entered for subsequent multiplication.

Small in size, the machine has an abbreviated keyboard. The date is entered by depression of a single key. Other single-key operations include memory reading, memory entry, negative multiplication, and re-entry. Totalling capacity is 13 columns.

Keys are carefully grouped and coloured to make operation as easy as possible. Symbols for the number



Easy to operate

*Equipment included in this survey is selected for its news value alone. Manufacturers are invited to submit details of new and interesting products for consideration. An original photograph should accompany each item submitted.

BUSINESS Equipment Survey

keys are black on a white background. Other keys are blue or black with white symbols. The casing is in black and grey.

*British Olivetti Ltd.,
10 Berkeley Square, London W.1*

Facsimile Transmission

THERE are two important new features in *Mufax D-900/1* facsimile equipment: (1) It has a foolscap-size reproduction area; and (2) facsimiles are made on translucent paper suitable for use in a dyeline photocopying machine. Another useful feature is that the equipment may be used over long distances on telephone wires.

Transmitter and receiver are separate units. Transmission may be on a 1:1 basis; alternatively, several receivers may be connected to the transmitter in an automatic broadcast system, or a switching device may be used to connect up any selected combination of receivers in the system. Transmission and reception are entirely automatic once the instruments are switched on and copy is put into the transmitter.

To transmit, the operator places the original—which may be of any size up to 8½ in. by 14 in. and of almost any background colour or texture—on to a transparent spring loaded blind. When this is released, it fastens the copy round the drum of

the instrument. Then the transmitter is switched on and electronic scanning begins.

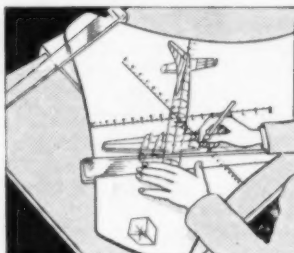
The receiver is loaded with a 200ft. roll of special paper—enough for 16 hours' continuous working. This is drawn slowly between a rotating helix and a knife-edge electrode. Whenever an electric current flows (which occurs whenever the transmitter 'eye' scans a dark area) a chemical action makes a black mark on the paper. The resulting facsimile is smudge- and fade-proof, and ready for immediate use.

Transmission time for a full-size message is 4½ to 6½ minutes, depending on the type of equipment used.

*Muirhead & Co. Ltd.,
Beckenham, Kent.*

Perspective Drawing Board

WITH the *Mavitta 3-D* drawing board, perspective drawings can be made direct from blueprints. The



Compact and light

board will enable relatively unskilled draughtsmen to do complicated perspective work, and will help the experienced to work faster, it is claimed.

The shape of the board incorporates three arcs, and on its white surface are imprinted three measuring lines which intersect at the focal point. These lines are scaled in units which diminish towards the vanishing point. Each arc has a corresponding transparent straight edge which traverses the arc and automatically ensures that the edge will always sub-tend towards its vanishing point.

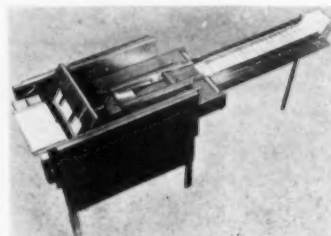
The 3-D is compact, light in weight and suitable for every application. The manufacturers say they will

gladly loan a board to companies who would like to test it on their own work.

*The Mavitta Drafting Machines Ltd.,
Highlands Road, Shirley,
Solihull, Warwicks.*

Mailing Costs Cut

STATIONERY costs can be reduced by using the *Mailmaster*—a machine designed to process bills and other documents for posting without



For no-envelope mailing

envelopes. It copes with any ordinary stationery from 8 in. x 6 in., to 8 in. by 17 in.

Self-feeding, the machine can be adapted to fold and tuck forms in several ways and to various finished sizes. For this reason each is built to the customer's specifications.

As documents emerge, they are stacked in numerical order ready for franking. Output is about 3,000 forms per hour. The machine is powered by a fractional h.p. electric motor for 230v. A.C. mains.

The price is unusually modest for a machine of this type.

*Kemp Applications Ltd.,
Tebworth, Leighton Buzzard,
Beds.*

Portable Plan Case

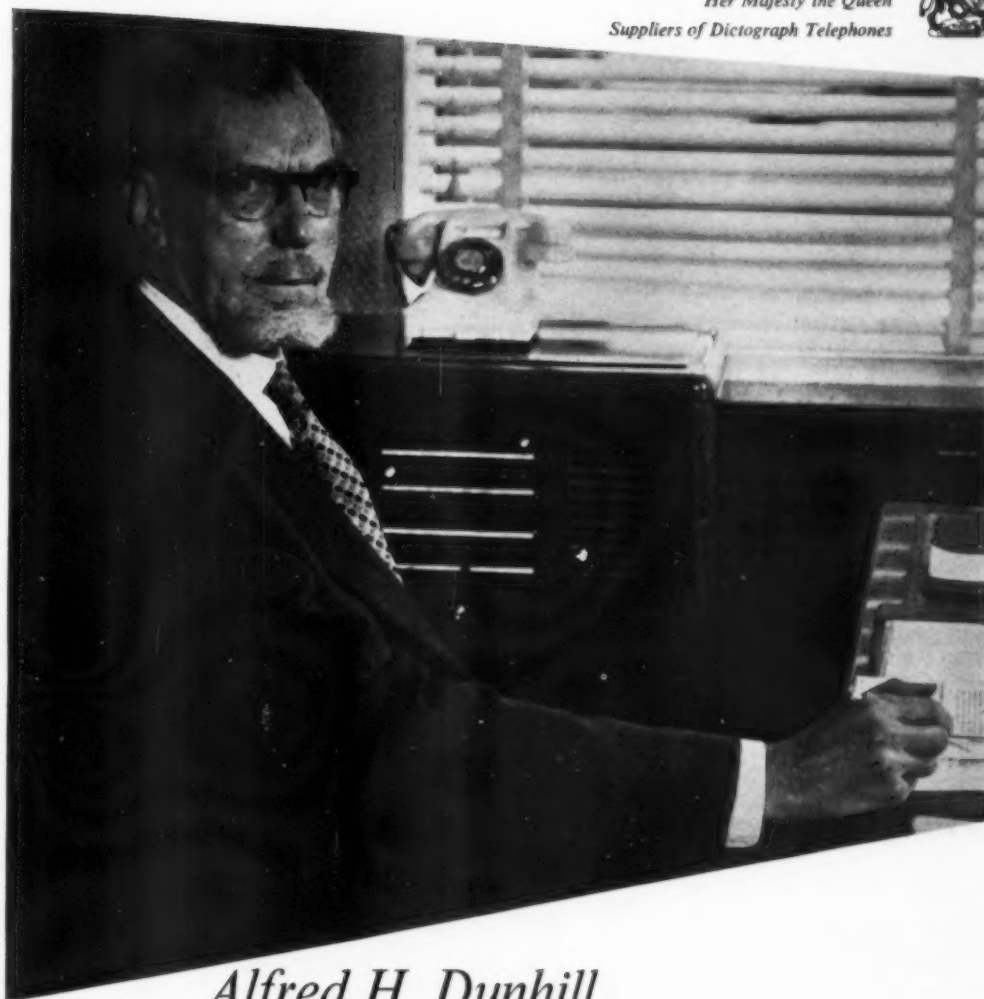
ABOUT 100 antiquarian size drawings, or a greater number of small drawings, can be housed in the *Plan-store Portable* carrying case. It is light in weight and measures 30 in. by 10 in. by 6 in.

Drawings are rolled and placed in eight drawers, each of which has a pull-out tab and index card. The entire front of the case is removable



Electronic scanning

By appointment to
Her Majesty the Queen
Suppliers of Dictograph Telephones



Alfred H. Dunhill

CHAIRMAN OF ALFRED DUNHILL LTD.

says...

"With DICTOGRAPH I am able to contact anyone in my organisation immediately"—"Could not manage without it"—

"I feel when I sit here that I have the whole firm, throughout the world, under my control".

INSTALLED IN THE NEW DUNHILL OFFICES AT 30 DUKE STREET, ST. JAMES'S, LONDON, S.W.1, ARE DICTOGRAPH INTERNAL TELEPHONES, STAFF LOCATION AND TIME SYSTEMS.

DICTOGRAPH TELEPHONES LTD.

200 ABBEY HOUSE, WESTMINSTER, LONDON, S.W.1.

27 BRANCHES THROUGHOUT THE UNITED KINGDOM AND IRELAND

ABBNEY 5572-6

BUSINESS Equipment Survey



Carries 100 plans

so that, when set down, it becomes a miniature chest of drawers.

It is fitted with a strong carrying handle and is stove-enamelled in grey.

*Randalrak Ltd.,
106 Victoria Street,
London S.W.1*

Fanfold File

A new manilla folder called *Tenastic* is designed to hold sprocket-punched continuous stationery. The sheets are filed in their original fanfold and are readable throughout.

The folder, made for the various sheet sizes used in tabulators and other machines, has a flange inside

fitted with two elastic tags. These are threaded through the holes in the sheets, so that each alternate fold is engaged. The file lies flat at any place, and even figures in the folds are visible.

*The London Letter File Co. Ltd.,
143 Farringdon Road,
London E.C.1*

Microfilm Unit

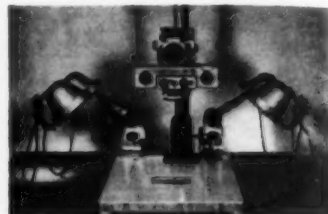
MICROFILMS can be made and viewed by the *Durst Micromat Color Enlarger*. The camera can also be used to make permanent photographic enlargements from black-and-white or colour negatives.

The camera moves up and down on a rotating vertical column, mounted on a baseboard. Position of the camera on the column fixes the size of the reduction or enlargement, the scale being determined by reading an indicator. Maximum linear reduction is x 17.

Using 35mm. film, the *Micromat* can photograph originals up to 12in.

by 17in. in area. There is a choice of three hard-coated lenses, each with a patented luminous diaphragm. An automatic focusing device simplifies operation.

When the camera is to be used as a reader, the image is projected on to the base-plate. This should be cover-



Camera-enlarger-reader

ed with light-coloured material for the purpose.

Among the various attachments which may be purchased as optional extras is a four-lamp lighting unit. The entire equipment weighs 30lb. and is 37in. high; the base-board measures 22in. by 18in.

*North Staffs Photographic Services,
Ball's Yard, Newcastle, Staffs.*

Not just a Numbering Machine... ...much more than a Dater

THE COMBINED NUMBERER
AND DATER-MODEL 4553
prints a date and number
simultaneously

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Steel engraved Date size 3 mm
— stylo change

4, 5, or 6 figure wheels
— automatic change

Sizes available 3 mm, 4½ mm or 5½ mm



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FEBRUARY, 1958



THE NEW IDEA IN OFFICE FURNITURE

PLANNED OFFICES
For **MORE SPACE** and
GREATER WORKING
AREA

HERE is a new conception in office furniture ... a complete work station embodying desk, side table, filing cabinet, card index cabinet, whatever you will ... all in less space.

Each employee has more desk area, with improved access to information or supplies ... all in less space.

Your installation can be planned to give flow production - easy movement of papers from position to position, from sales clerk to accounts clerk ... all in less space.

The basic idea is a single work station made up of desk (plain, typing or computer) and pedestal, attached to Auxiliary and end support and/or pedestals of deep desk drawers, stationery drawers or card index cabinets in whatever pattern you wish (there are over 60 to choose from). Add extra desk tops with pedestals or fitments in the most suitable formation, and you have efficiency without effort ... all in less space.

And the cost is no greater than ordinary office furniture.

Even if space is not important, can you afford to overlook the advantages of greater output with less movement? You can start with one or two work stations and add as you expand. Just write 846 on your letter-heading for free details by return.

**DESK,
FILING,
CUPBOARD
IN ONE**

**'FLOW
PRODUCTION'
IN THE
OFFICE**

**GREATER
OUTPUT
WITH LESS
MOVEMENT**

Shannon Systems
846

**System
Office Furniture**

THE SHANNON LTD.
54 Shannon Corner, New Malden, Surrey

(1945T)



THE AUSTIN MOTOR COMPANY say

"Hi-Dri paper towels give added efficiency"



Why are Austin among Britain's biggest and most successful car manufacturers? One reason, certainly, is that they believe in offering a quality product at a reasonable price. To keep costs down and achieve this aim, a high standard of efficiency is maintained throughout the Austin organisation. That's why Hi-Dri Paper Towels are installed in all their washrooms. Hi-Dri ensures that everyone gets a *quick*, clean dry — with no queuing — so saves vital man-hours. And, because Hi-Dri is a *quality* towel, it absorbs water fast and stays firm even when wet. Result: only a small amount of towelling is used for each dry.

Hi-Dri, in fact, as Austin have proved, is the most efficient and economical method of providing *everyone* with a clean, dry towel every time.

THE COMPLETE DRYING SERVICE

Phone or write for a professional demonstration. Industrial Division 3—
Kimberly-Clark Limited, 11 Grosvenor Gardens, London, S.W.1.
Tel: TATe Gallery 4051.

ANOTHER FINE BRITISH PRODUCT FROM KIMBERLY-CLARK  LIMITED

HI-DRI OFFERS YOUR BUSINESS ALL THESE ADVANTAGES

- Hi-Dri is the most economical and efficient way of providing a *clean, dry towel every time!*
- Hi-Dri towels are used just once, then disposed of — can't pass on infection.
- No queuing in the washrooms.
- Hi-Dri has immediate absorbency with *very high* wet strength.
- Dispensing Cabinets supplied and installed **FREE** on loan.
- Hi-Dri is more than a paper towel, it's a complete drying service.



BUSINESS Equipment Survey

INDUSTRIAL EQUIPMENT

No Stoooping

CONTINUAL bending and stooping, common in many stores, or where machines are fed from stacks of trays and bins, are avoided with the *Autolevel* table. This is a container with a platform that sinks and rises as articles are placed on or taken off it, so that the loading level always remains at a convenient height.

A spring compensating mechanism operates the platform's movement. The table can be a fixture; mounted on wheels, it is suitable for machine



Right height—always

feeding or unloading, and inspection purposes.

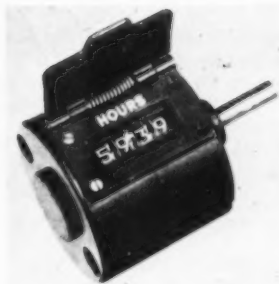
Overall size is 47in. by 24in. Platform measures 35½in. by 23½in. Maximum load is 600lb.

Messrs. Barron & Shepherd Ltd.,
16 Blackfriars Lane,
London E.C.4

Service Recorder

ALREADY in extensive use on internal combustion engines, mechanical service hours recorders are useful for other machinery that needs preventive maintenance. A very compact mechanical service hours recorder, whose size (1.825in. diameter) enables it to be fitted almost anywhere, is now available.

The recorder is covered by a protective window and has two mounting holes at 1.19/32in. centres. An optional extra is a driveshaft extension with threaded boss to provide a



For maintenance checks

take-off point for a flexible drive, for tachometers, etc.

Gearing can be arranged to record one unit for any number of revolutions of the driveshaft up to 162,000. Thus it is possible to record service hours at mean driveshaft speeds up to a maximum of 2,700 r.p.m.

English Numbering Machines Ltd.,
Queensway, Enfield, Middlesex.

Plastic Pump

SIMPLE and inexpensive, the *Placid* pump handles small quantities of corrosive liquids, including acids and alkalis. It is constructed mainly of polythene with a bulb at the top.

The pump is pushed into the neck of the carboy or container. Squeezing the rubber bulb draws off liquid at up to six pints a minute. It is suitable for any container up to 23in. deep with a neck not less than 1½in. in diameter.

E. M. Francis Ltd.,
Mortimer House,
Linton, Cambs.

Roll Ruler

WHERE a series of lines, horizontal or vertical, has to be drawn, the *Roll Ruler* saves time and patience.

Suppose a series of horizontal lines have to be drawn ½in. apart. The first line is drawn with the ruler in the ordinary way, but for the next one the ruler is simply rolled back



Parallel lines made easy

till ½in. is shown on the spiral; and so on. The ruler is never lifted from the paper and only reasonable care is required to keep the lines parallel.

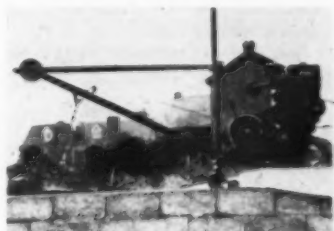
For producing drawings or plans, the ruler has squared edges to mate with 'T' squares. Serrated edges at its ends prevent slipping.

J. C. Neville Ltd., 34 Priests
Bridge, London S.W. 14

Diesel Jib Crane

PERFORMANCE of the *Saga Junior* scaffold jib crane, hitherto available only with a petrol engine, is 100 per cent improved by the substitution of a diesel engine.

It raises a 5cwt. load at 110ft./min., and a 3cwt. load at 220ft./min. For loads of 5cwt. the working radius is 4ft. 4in., and for loads of up to 3cwt.,



Now with diesel engine

5ft. The jib can easily be slewed through 360 deg. by hand.

All bearings are totally encased. No site lubrication is required. Standard fittings are twin internal independent brakes and single lever control, with 'dead man' braking.

Petrol-engined units can be converted to diesel.

The British Hoist & Crane Co. Ltd.,
Compton, Berks.

Simple Stacker

WHEN congestion in a warehouse makes the use of fork trucks impracticable the only solution is a

BUSINESS Equipment Survey



Manoeuvres in 6ft.

pedestrian-controlled stacking truck. A new model, the *F.S.H.P.1.*, lifts half a ton up to 84in. high at 10ft. per minute.

Power is from a battery electric motor, which operates a hydraulic system. Controls are all push-button. A charger is built-in; the lead is simply plugged in to the mains at the end of the shift.

Design is on the 'straddle' principle. Straddle widths of up to 42in. are available. Gangways less than 6ft. wide are sufficient for all manoeuvres.

*Lansing Bagnall Ltd.,
Kingsclare Road,
Basingstoke, Hants.*

'Fumeless' Spraying

SMALL and light, a new portable spray gun uses electric power instead of compressed air. It considerably reduces overspray and mist. Safety is enhanced by the use of a vibrating magnet instead of a motor.

Fume extraction equipment is not necessary. Less masking and cleaning up is required. Spraying can be carried on continuously indoors.

Known as the *Champion Super Electric*, it is said to give the same degree of finish as compressed air guns. It is not intended to supersede high-speed air pressure sprays used in booths.

Weight is 3lb. Any liquid can be sprayed, including chemicals and

fire-resisting compounds. Coverage rate is about twice that of air guns.

*S.E.C.A. Limited,
225 Westminster Bridge Road,
London S.E.1*

Small Hoist

A SMALL portable electric hoist, weighing only 150lb, and with a maximum lift of 6cwt., has been added to the *Munk* range. It uses a roller link chain.

The hoist can be hung from a top suspension hook or from a travelling trolley.

The standard model lifts a height



Standard model lifts 6 cwt. a height of 10ft., yet weighs only 150lb.

of 10ft.; a larger model lifts up to 12cwt. Longer chains can also be supplied. A second, slower, lifting speed is an optional extra.

*Messrs. Taylor Stoker Co. Ltd.,
189/191 Drummond Street,
London N.W.1*

Durable Flooring

FLOORS made of *Permadec* have several advantages. They are light and extremely resistant to oil, chemicals, damp and corrosion of practically every type. The material consists of beech veneers laminated with synthetic resin, under extreme pressure. The appearance is of deep mahogany.

Permadec is simple to lay and economical in use—it lasts longer than traditional substances like wood, sheet steel, cork, linoleum or rubber.

Because of its high electrical, thermal, and sound insulation it is convenient for flooring vehicles. Its weight is only one-quarter that of

magnesium/cement mixture. It is also suitable for lifts, escalators, battery charging rooms, and decking in chemical plant where corrosion problems are severe.

One square yard, $\frac{1}{2}$ in. thick, weighs 28lb—less than one-sixth of that of steel. It is available in thicknesses from $\frac{1}{2}$ in. upwards. Standard panel size is 5ft. by 3ft.

*Permali Ltd.,
Bristol Road, Gloucester*

Water Saver

THE *Unatap*, a combined hot and cold water spray mixing tap for washrooms reduces water consumption considerably, the manufacturers claim. By turning a knob, water of any temperature required is obtained. The user washes his hands under a continuous spray from the tap which controls the flow of water to 4.5 pints per minute.

One establishment with a staff of 1,000 formerly used every week 16,000 gallons of hot and 6,000 gallons of cold water. The *Unatap* reduced consumption to 9,000 and 2,000 gallons respectively. Incidental advantages are that plugs, chains and overflows are not required.

*Walker, Crossweller & Co. Ltd.,
Whaddon Works, Cheltenham*

CANTEEN

Quick Dishwashing

CROCKERY and cutlery for up to 800 meals an hour are cleaned, rinsed and dried by an improved version of the *Wefcoma* dishwasher. One operator loads; another unloads. Compared with conventional methods savings in labour costs of up to 50 per cent are possible.

The machine is fully automatic. First the crockery is loaded onto a conveyor; it then undergoes a cold pre-flush; next, three separate hot pressure washes at varying temperatures and finally a hot rinse. A drying agent in the water speeds up drying. No wiping is needed.

Smaller versions are available to cater for 200 and 80-120 meals per hour.

*Wefcoma Limited,
21/22 Poland Street, London W.1*



SOME OF THE USERS OF AIR TOWEL:

Clarnico Ltd. • Co-operative Wholesale Society Ltd., Derby • Alfred Hughes & Sons Ltd., Birmingham • Ilford Ltd., London • Sanbra Ltd., Birmingham • The Singer Manufacturing Co. Ltd., Clydebank • Staveley Iron and Chemical Co. Ltd., Chesterfield • Universal Grinding Wheel Co. Ltd., Stafford.



Photo by courtesy of The Universal Grinding Wheel Company Ltd., Stafford

This towel never gets wet

NEW STEAM-HEATED HAND and FACE DRYER

OUTSTANDING ADVANTAGES:

- High speed hygienic drying for hands, face, arms and hair. ● Deals with 8 to 10 persons per minute. ● For instant heat and quicker drying. ● Slashes towel costs. ● Prevents spread of skin infection. ● Operates from factory's own steam supply. ● A self-contained unit—easy to install. ● Robustly constructed for long trouble-free service.



The Spiral Tube Air Towel has been awarded the Certificate of the Royal Institute of Public Health and Hygiene for Hygienic Merit
Patent Application No. 30090/56

FURTHER PARTICULARS FROM THE AIR TOWEL DIVISION (Dept. B)

THE SPIRAL TUBE & COMPONENTS CO. LTD., OSMASTON PARK ROAD, DERBY.

Tel: DERBY 48761 (3 lines)

LONDON WORKS: HONEYPOT LANE, STANMORE, MIDDLESEX. TEL: EDGWARE 4658/9

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Safety Automatic Incinerator

By the simple depression of a lever the Barrywald Sanitary Incinerator automatically destroys sanitary towels, surgical dressings, documents, etc.

It solves major and vital welfare and security problems in factories, offices, institutions, etc.

Write or 'phone today for illustrated leaflet or demonstration.



- ★ It is manufactured by the first and leading Sanitary Incinerator Specialists in the World.
- ★ It is guaranteed for one year and backed by a full service organization.
- ★ It is simple and cheap to install.
- ★ It is the only Incinerator incorporating our patented safety devices.
- ★ It is approved by the Royal Institute of Public Health and Hygiene.
- ★ It is regularly supplied to and approved by all H.M. Government Departments, Local Administrations and Educational Authorities, Hospital Management Committees, General Industry.

Patents 555062-621085 and Foreign Pats.

**ECONOMICAL
EFFICIENT
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INDISPENSABLE**

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62, LONDON WALL, LONDON, E.C.2

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FEBRUARY, 1958



with ADLER typewriters!

Every unit of the ADLER is tuned up for SPEED, every precision device constructed for TIME SAVING.

Take for example the AUTOMATIC RAPID PAPER FEED INJECTOR — with "FLYING START", paper, letter heading or invoice is inserted into CORRECT POSITION by one single flick, ready for instantaneous key operation. All customary paper manipulation and adjusting is a thing of the past.

All features of the ADLER are constructed for SIMPLICITY.

You are welcome to a demonstration or a machine on 7 days trial

ADLER

UNIVERSAL



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ADLER
Try
ADLER
you will buy
ADLER

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140-148 Borough High Street, London, S.E.1

Incentives-for-all Plan

Starts on page 92

Quality

First 'shorts'	611
Second 'shorts'	29
Complaints	8
Total	648
Pieces packed: 70,002 therefore	
percentage error is 0.93	
Graph expresses 0.93 as a performance rating of 70.	

Quantity

Average operator performance during the week: 84

Rating

70 x $\frac{3}{4}$	52 $\frac{1}{2}$
84 x $\frac{1}{4}$	21
Total	73 $\frac{1}{2}$

Bonus

Reading 73 $\frac{1}{2}$ against the pre-determined bonus tables gives a cash sum of:
£2 2s. 0d.

This scheme succeeds in linking an indirect incentive as closely as possible to direct results (output and quality). By allocating three-quarters of the bonus to quality, it also ensures that the operators' bonus scheme does not result in bad working.

Special incentives are offered to the two remaining people not covered by any of the above schemes: the works manageress and the work study engineer. Once again the idea is to get as close as possible to a direct incentive.

Basis of the special incentives is the laundry's percentage ratio of productive wages to turnover. A 'dead level' has been set for this percentage, representing what past records show to be a norm. For every point by which the wages percentage decreases, the manageress and the work study engineer get £1 a week bonus each.

Stabilization of the productivity figure is an important accounting aspect of the 'special' incentive. If a straightforward weekly percentage ratio of productive wages to turnover were taken, there would inevitably be considerable fluctuations during the holiday period. These would affect the bonus, even though the reasons for them have nothing to do with management efficiency.

What is done, therefore, is for the

cost of holiday wages to be *accrued on paper* during the winter months. Each week, one twentieth of the productive wages is added on before the percentage figure is taken. This not only stabilizes the special incentive payments, but also puts the laundry's productivity figures on a much more realistic basis.

How the schemes worked out

Apart from the startling figures quoted in **Figure 2** in connection with the production bonus, other direct and indirect benefits have resulted from this comprehensive set of schemes:

► **Overtime is out.** It used to be traditional that at peak periods laundry workers have at least two very late nights per week. Now the guaranteed 45-hour week and the bonus system have made late night working a rarity.

► **Employees are more flexible.** If the management want to switch a worker to a new department or machine, there is often resistance. But the bonus can overcome this if it proves that a person's skill is more profitably employed on the new job.

► **Bonus shows up weak spots.** Careful watch is kept over bonus earnings. Where an operative is learning less, the chances are that something is wrong with production methods. This is where the work study engineer steps in to check up. Often there has been a departure from the method originally laid down, or something unforeseen has upset time calculations. In either case, immediate action helps cut out inefficiency.

► **Indirect workers improve their performance** with merit-rating to keep a check on them. It is not unusual for a clerk to pull up from a 60 rating to nearly 80 within a year. This is one way in which management can see what it is getting for its merit-rating money.

► **Office staff has been reduced.** At a time when other companies find office staff increasing, White Swan have, in fact, one clerk less than before, though the amount of work has considerably increased. END

FEBRUARY, 1958



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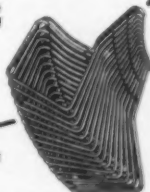
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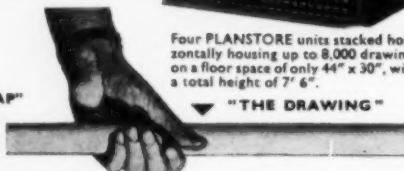
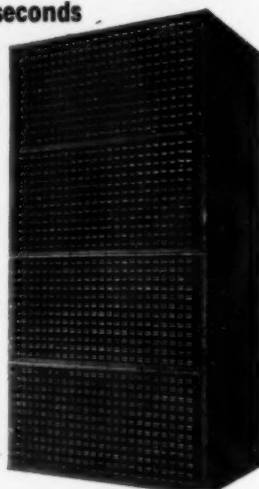
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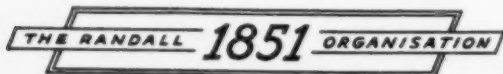
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Photocopied Paperwork

Starts on page 101

justification for the use of photocopying equipment in the system.

It will be seen that on the foil blocks have been allotted to 'quantity this batch', 'total quantity batched', 'batch number', etc. The foils take pencil entries well, they reproduce strongly, and are easily erased and amended.

The principles governing batching are—only one sales order per batch, even if it consists of one relay;

—not more than 40 relays in any batch;

—as many types of relays as necessary from a single sales order to make a batch.

The entries on the relay data sheet foil are self-evident, except perhaps for 'Repeat'. When ticked, this means that after a batch list has been printed, the foil is not to be filed but returned to a batch clerk to be used again.

'File in week No.' applies to orders calling for a quantity of relays spread over a number of weeks. When the quantity required in any given week has been batched, the foil is refilled in a forward week until it is time for batches from that week to be released.

The batch list implements assembly of relays and consists basically of two sets of information:

1—The relay data sheet foils, completed to denote the quantity batched, etc., and bearing a batch number for identification.

2—Test sheets relating to the relays batched.

Test sheets are filed in the form of transparent masters. A composite print is prepared of relay data sheet and test sheet in order to present a full picture. The two transparencies are placed in a foil cover to hold them together during printing.

The foil cover also bears information which is reproduced on every batch list. This information coincides with perforations on the sensitized paper, and, when torn off, produces a docket which forms a progress check.

Two copies of batch lists are prepared.

ted and each fulfils specific functions:

One goes to stores where a collection of parts is made and issued against the batch list. The coils and springsets are stored in bays numbered to correspond with the week number in which they were due into the stores.

The other goes to the printing section where labels relating specifically to the relays concerned are printed, attached to the batch list and passed on to the assembly section.

During assembly, both batch lists accompany a batch of relays, but on completion one copy stays with the relays in stores to identify them, while the other is returned to production control where it is used for updating progress records. END

Are Your Costs and Prices Realistic?

Does your thinking take account of changing values? So many things have gone up in price—labour, machinery, supplies, professional services and finished goods. This table, based on the retail price index, gives you a rough set of conversion factors for bringing your values up-to-date. For example, if you spent £100 on a machine in 1931, for which year the conversion factor is 2.85, then you could hardly be surprised if a similar machine now costs £285. It may actually cost more or less, but you would expect values generally to be around 2.8 times the 1931 level. This table will be brought up-to-date every quarter, but published monthly for handy reference.

Year	Con- version Factor	Year	Con- version Factor
1913	= 4.19	1935	= 2.91
1919	= 1.93	1936	= 2.85
1920	= 1.69	1937	= 2.71
1921	= 1.86	1938	= 2.68
1922	= 2.29	1939	= 2.60
1923	= 2.39	1946	= 1.74
1924	= 2.39	1947	= 1.65
1925	= 2.39	1948	= 1.53
1926	= 2.44	1949	= 1.49
1927	= 2.50	1950	= 1.45
1928	= 2.53	1951	= 1.32
1929	= 2.55	1952	= 1.21
1930	= 2.65	1953	= 1.18
1931	= 2.85	1954	= 1.15
1932	= 2.91	1955	= 1.11
1933	= 2.98	1956	= 1.05
1934	= 2.98	1957	= 1.02

BURUARY, 1958



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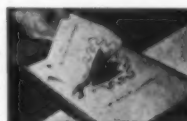


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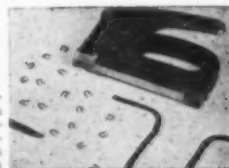


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Better Incentives

Starts on page 78

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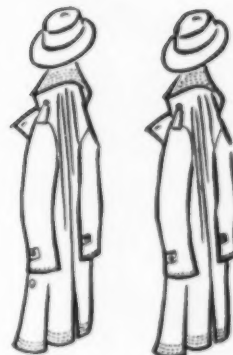
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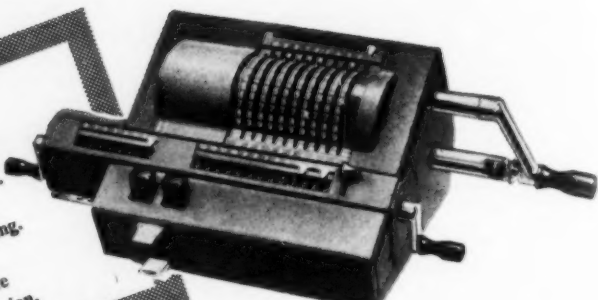
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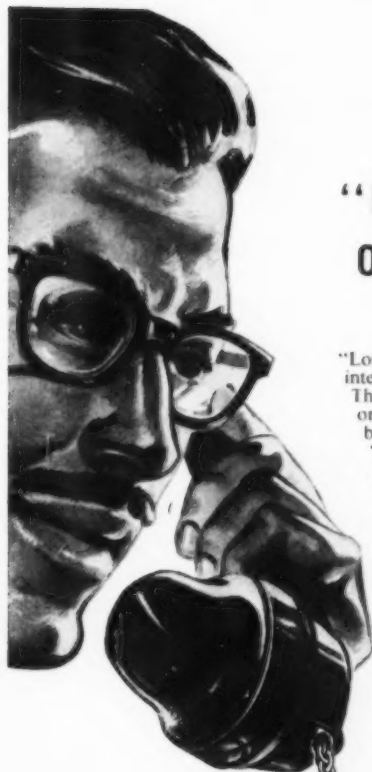
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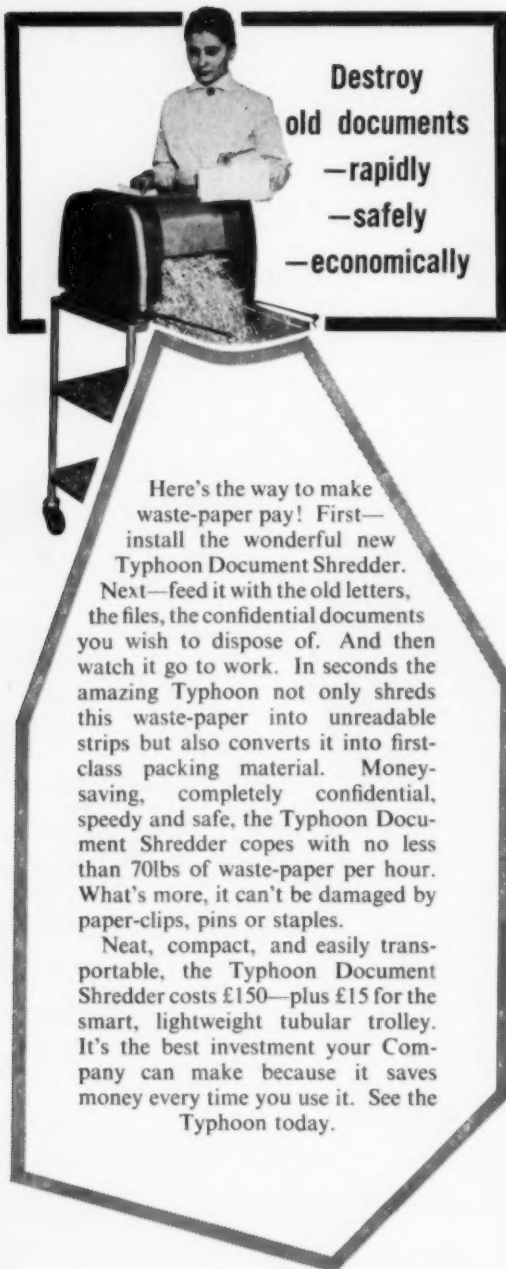
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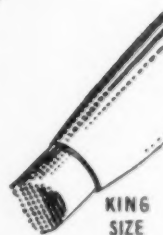
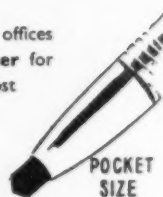
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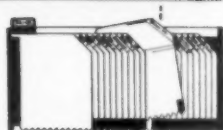
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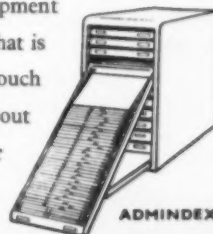


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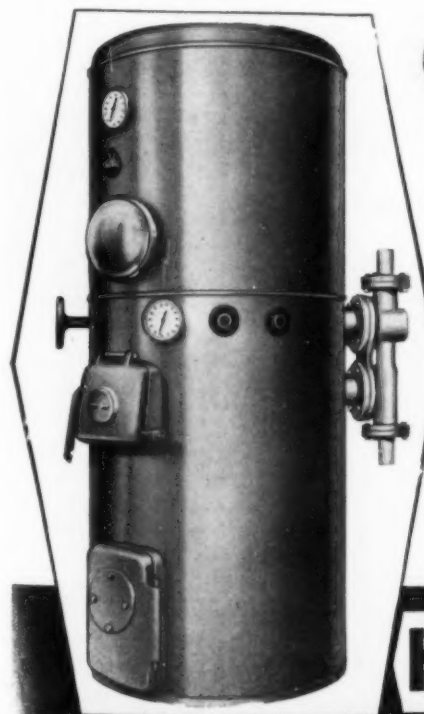
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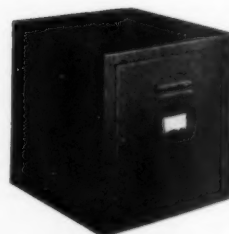
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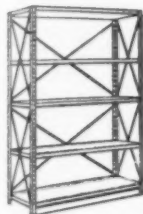
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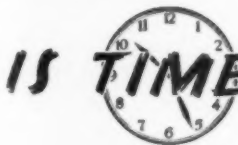
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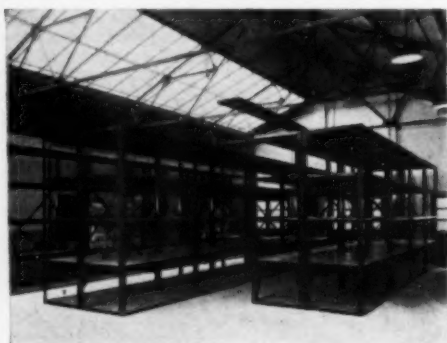
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and Baldwins



Should Industry Help the Arts?

by Neil C. Hearne

Some points to consider:

- ★ Employees may appreciate and be proud of your patronage.
- ★ Art can be a forceful medium for interpreting industry.
- ★ Enhanced prestige awaits the astute patron of the arts.
- ★ There is commercial value in artistic decoration of premises.

"ART breaks the monotony of life, which is one thing the human mind cannot endure. Monotony would drive the world insane; art is the antidote."

This is not a *cri de coeur* from Chelsea. These are the words of a businessman—the late Thomas J. Watson, president of the International Business Machines Corporation, (U.S.A.). He realized that looking after the interests of employees does not merely mean higher wages, fewer working hours and attractive pension

schemes. There is the problem of leisure hours, of how to help workers overcome monotony. Enterprising firms have given careful attention to the matter: in this country the John Lewis Partnership provide their own members with facilities for enjoying the arts. Not only is there a gain of company prestige—but a contented employee is likely to work more efficiently. Labour turnover is reduced when boredom and frustration are minimised.

John Lewis subsidize concert and

theatre tickets, especially for the Glyndebourne Festival, and have a music society of their own, for which small orchestras are engaged. Periodically the partnership make contributions to music festival funds, particularly when their own members compete. Except at the peak trading seasons of the year half-hour lunch-time concerts are held at Cavendish Square.

At the firm's Oxford Street building there are opportunities for amateur dramatics. In one of the rooms

► **"Resolve to stand for something big and fine outside of your business life."—the late Thomas J. Watson, president of I.B.M. (U.S.A.).**

there is a small pit for an orchestra, modern lighting and seating for upwards of 300 people. Professional tuition in painting is also available and a library of modern and classical prints is in constant circulation between the various branches.

In America Thomas J. Watson promoted an extremely active interest in painting among I.B.M. workers; by 1947 there were regular art classes and week-end painting groups. At the company's home factory, at Endicott, New York, more than 7,000 pictures, sculptures, prints and ceramics had been collected. Mr. Watson considered that breaking down monotony was just as important as increasing productivity and profits. And of course money spent on artistic activities is allowed as an expense, for tax purposes, when it can be proved that the expenditure promotes business.

The interpreter of industry

"Should the artist reveal beauty where others have seen only efficiency, he will have done something to humanize his patron."

Eric Newton, speaking at an art exhibition, "Industrial Britain", sponsored by Richard Thomas and Baldwins Ltd., stressed that the artist may be an *interpreter* of industry: he can bring to life the poetry behind the fact.

During the war artists were commissioned by the Standard Oil Company (New Jersey) to paint on location the places to which petroleum

products were sent—the jungles, the bombed cities of Europe, the high seas. Their contribution was not confined to the firm: they certainly 'interpreted' oil, but they also produced a valuable pictorial record of the conditions under which the war was fought. They were able to achieve an effectiveness and realism denied even to the photographer.

In 1955 the Shell Petroleum Company held an exhibition of paintings, "The Artist's View of An Industry". Seventy-three young artists were invited to paint any aspect of the oil industry. Shell paid their expenses, and eventually 90 works by 60 different painters were chosen for exhibition at the galleries of the Royal Society of Painters in Water Colours. The Collection is at present on tour abroad.

Early in 1956 Richard Thomas and Baldwins Ltd. sponsored the exhibition already mentioned, "Industrial Britain". Any artist over 16 could enter the competition and submit two pictures. The subject matter included not only factories, but the machines, the men and the whole environment in which they moved. Twelve hundred entries were received, 200 of which were selected for the actual exhibition organized by the company at the Chenil Gallery in London. The prizes ranged from a first of £150 to five of £50. There were two additional £50 awards for the best works submitted by the firm's employees.

An industry which seeks this kind of interpretation automatically focuses attention upon itself and the re-

sult is a unique kind of prestige advertising, different from 'commercial' art, where the artist is restricted to 'selling' his subject.

Prestige for the patron

Many companies have given substantial sums of money for sponsoring exhibitions of paintings, concerts and even literary awards. Is this pure altruism? Of course not. It is, in Sir Frederic Hooper's words, "a new development of modern business technique". The name of a firm and its products will be associated with one of the most significant human activities. The quality of the paintings at a sponsored exhibition becomes, by association of ideas, the quality of the sponsor's goods.

The Glyndebourne Festival Society is one example of commerce co-operating with the arts for prestige purposes. Forty firms are corporate members, at an annual subscription of 100 guineas; each year the Festival Society produces an elaborate programme book, in which firms advertise at unusually high rates, the advertisements being regarded as gestures rather than purely commercial investments.

The first John Lewis Partnership donation to the arts was a gift to the Glyndebourne Opera, and in the 1950 season they provided over £8,000. Financial support has continued; the firm also purchase tickets on a large scale. Considerable help has also been given to the Impresario Society and the Handel Opera Society; and foreign orchestras have

► **"The man who today leads a large industrial concern will be wise to consider how best he may exercise patronage of the arts. . . . His faith will be that of Dubedat, the artist in Shaw's 'Doctor's Dilemma': 'I believe in Michelangelo, Velazquez and Rembrandt, in the might of design, the mystery of colour, the redemption of all things by Beauty everlasting.'" —Sir Frederic Hooper, managing director of Schweppes.**



A scene from the production of "Falstaff" by Glyndebourne Festival Society, which has 46 firms as corporate members

been invited over to this country to perform.

Support is given by John Lewis to the British Drama League, the Open Air Theatre in Regents Park and to the new Questors Theatre at Ealing. The Partnership have assisted the English Stage Company at the Royal Court Theatre and last year 1,000 guineas were given under covenant for the establishment of an arts centre for Tyneside.

Since 1948 over 100 art exhibitions have been held on Ind Coope and Allsopp premises throughout the country. Some were arranged by the local art societies—pubs being used as informal galleries. Others were directly sponsored by the firm; in some cases the canvases were for sale as an encouragement to young artists.

Another brewery company, Arthur Guinness, Son and Company Ltd., intend to award £300, £200 and £100 for the best three poems published during the year which began on July 1st, 1957. There are to be no restrictions on the length of poems or on the subject matter; the company will collect the works as they are published. If none of the poetry reaches

a suitably high standard the prizes will be held over until the next year. The firm will arrange publication of a selection of the poems if the quality justifies. The poetry competition of the Cheltenham Festival of Art and Literature is also sponsored by the company.

Industry's patronage of the arts received a pre-war fillip when I.B.M. organized an exhibition with the title "Art in 79 Countries". One contemporary painting from each of the countries where I.B.M. marketed its goods was selected and exhibited. These pictures were not used directly to promote sales, neither were they resold. But later, at the New York and San Francisco trade fairs, paintings were shown beside business machines. In 1939 the firm's New York exhibition attracted 3,000,000 visitors—16.5 per cent of the total figure for the whole fair. By 1941 the firm had extended its sponsorship of the arts to sculpture. Ninety-seven modern works, in a variety of materials, were collected "from every country, state and dominion in the Western hemisphere". I.B.M. collections of paintings, sculptures and ceramics have since been on tour to

museums, galleries, schools and institutions.

"Is not a Patron, my Lord, one who looks with unconcern on a man struggling for life in the water, and, when he has reached ground, encumbers him with help?"

Today Dr. Johnson would have had little reason for complaint. Business leaders are beginning to realize that, as Medici in a modern guise, they may gain considerable prestige for their firms by patronizing unknown artists.

Messrs. Schweppes have selected a play due for production at the Royal Court Theatre and have underwritten the production costs up to £1,000. The play, "The Sport of My Mad Mother", is by an *unknown* playwright, Miss Ann Jellicoe. If it turns out to be a success the profits will be set against future productions of the English Stage Company. The firm intend to act as patron, rather than impresario.

The Ford Motor Company, together with Graphic Films, last year commissioned a 40-minute documentary film about Covent Garden called "Every Day Except Christmas". The director, Lindsay Ander-

son, was allowed a completely free hand on this admittedly experimental film.

The John Lewis Partnership have held exhibitions of paintings by unknown artists at their Peter Jones building, and last autumn the Littlewoods organization co-operated with the Liverpool Libraries, Museums and Arts Committee in promoting an art exhibition. Over 180 pictures and pieces of sculpture were on view at the Walker Art Gallery; over 4,000 were submitted. The firm awarded prizes to the value of £4,000. The object was to encourage the most progressive artists to show their work on Merseyside. Mr. John Moores expressed his company's attitude to the project:

"Large scale organizations such as ours have a responsibility to the whole community."

In America Pepsi-Cola have been producing calendars with art reproductions for many years: their competitions encourage unrecognized painters.

Commercial value of art

Occasionally imaginative art may be utilized in advertising or industrial design. The artist can still be allowed considerable latitude. The London Transport posters are a good example of the tasteful application of art to commerce—notably the paintings of Wren churches by the South African artist, Hans Unger. These illustrations have helped to sell the advertised booklet describing how to get to Wren buildings in the city.

The Orient Line Steam Navigation Company employ artists in what might at first appear to be a restricted field—but the restrictions disappear on closer examination. The interior decoration of a ship offers a great deal of scope for imaginative art. For the decoration of the R.M.S. *Oronsay*, Orient Line commissioned Brian O'Rorke, Douglas Annand and Lynton Lamb. Sir Colin Anderson, the company's chairman, is a keen art collector himself, and he has introduced paintings of a high quality into the ships.

Whichever way one looks at commercial sponsorship and patronage

of the arts one fact emerges clearly. The businessman should have the last word on the subject, since to a large extent the arts look to him for support.

Sir Frederic Hooper, managing director of Schweppes, in an address to the Royal Society of Arts in March, 1955*, pointed out that there were only two possible patrons of the arts today—the State and Business. The State can only give very limited assistance, since defence commitments are so heavy. The onus is therefore on the businessman.

"It is survival rather than the art of living which claims our attention," he continued. "In such a climate of thought, the decencies of life are the first to perish. It is not easy to concentrate on the redecoration of a ship's saloon when the vessel is

thought likely at any moment to founder." But in this violent age it is the arts alone which can provide us with the "necessary stability and balance."

Sir Frederic approached his subject historically, pointing out that the Industrial Revolution involved a break between power and judgment, money and taste. This break must now be repaired. But the shareholders must be convinced that the firm's interests were being served by the financial outlay or patronage. To achieve this, there must be publicity.

The scope for commercial patronage of the arts is certainly immense, but there are no direct and measurable profits to be gained. The benefit lies in the prestige which commerce will gain by giving material assistance to the artist who sees the poetry behind the fact, and who believes that the "redecoration of the saloon" is a really worthwhile task. END

*"Business as Patron of the Arts in the Industrial Age"



Two London Transport employees view paintings in the 11th annual exhibition of the London Transport Art Group

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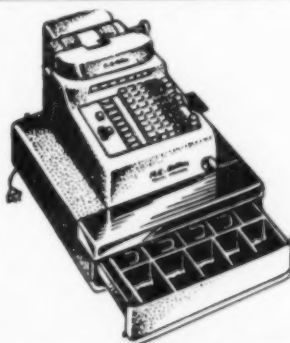
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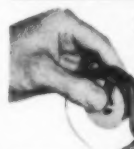
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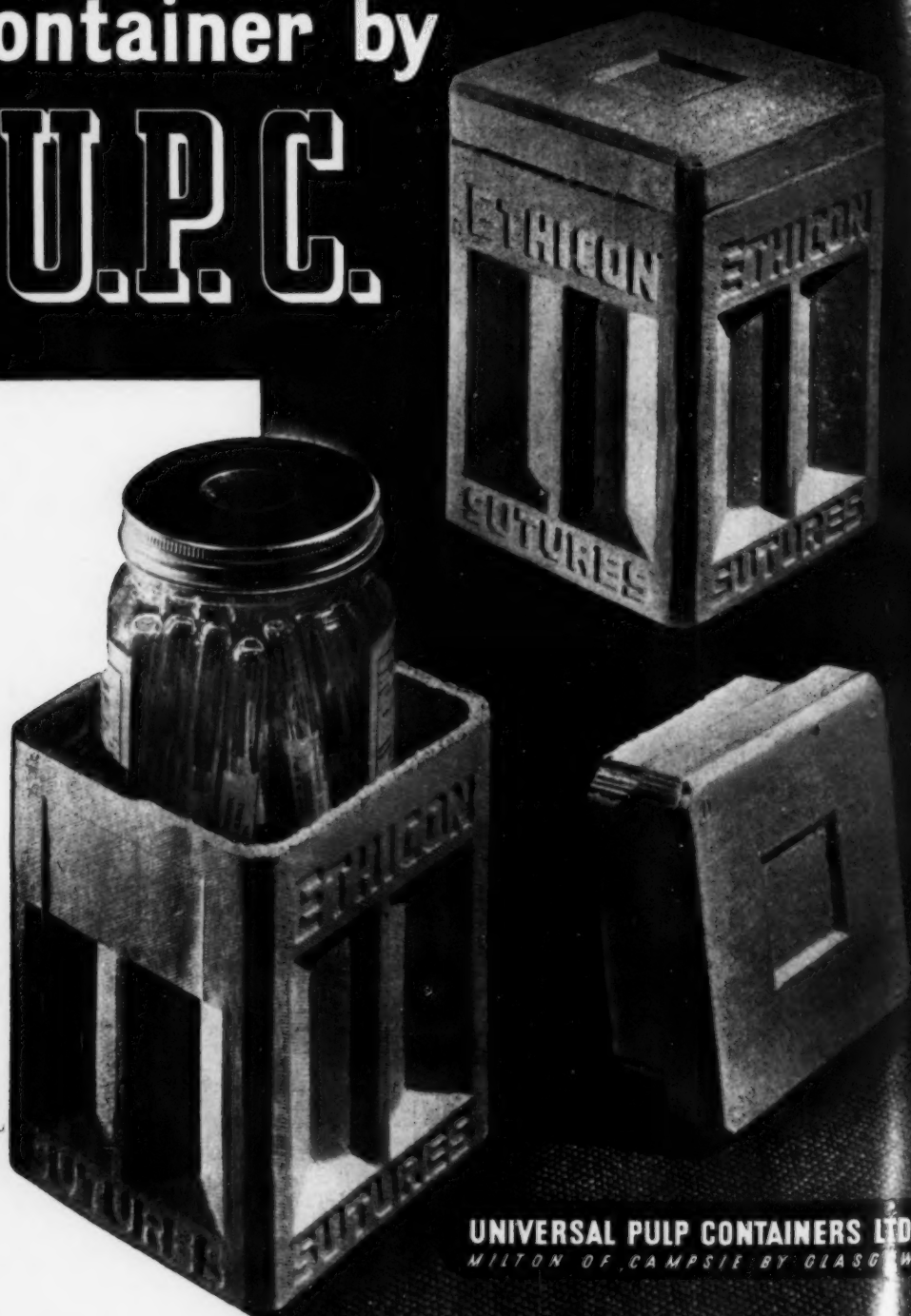
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